The Decline Continues: New Primary Care Physicians from North Carolina Medical Schools

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Warren Newton, MD MPH
Alan Brown, MSW
North Carolina AHEC

Julie Spero, MSPH
Cecil G. Sheps Center for Health Services Research
Program on Health Workforce Research and Policy

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Monitoring the Progress of Graduates Entering Primary Care

EXECUTIVE SUMMARY

In 1993, the General Assembly mandated an annual report on the progress of medical school graduates going into primary care. North Carolina AHEC, working with the Sheps Center, produces this report using state licensure data bases as well as national data bases. For 2015, we document a decline for the sixth year in a row of state medical school graduates going into primary care: of 427 graduates of the state medical schools matriculating in 2009, only 29% are in practice or training in primary care specialties five years after graduation. Of these, only 59 or 14% percent are practicing in North Carolina and only 11 (or 2.5%) are practicing in one of the 54 rural counties in the state.[1] These findings suggest that attention should be paid to the pipeline of primary care providers for the state; a key first step will be to increase the numbers of community based primary care residencies and other opportunities for primary care training in the state.

Introduction

This report presents trends of entry into primary care in North Carolina by graduates of the four schools of medicine in the state. In 1993, 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, general internal medicine, general pediatric medicine, 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

[1] "Rural" is based on 2013 Core-Based Statistical Area (CBSA) definitions, and includes counties that are "micropolitan" and "outside of CBSAs." Using this definition, NC has 54 rural counties.

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." In addition, because of their importance in the care of rural and underserved communities, we have included data on general surgery and psychiatry.

While the original mandate of this report was specific to the four NC medical schools, new programs will also be monitored. Our intent is to include Campbell University School of Osteopathic Medicine as its graduates enter residencies in 2017 and into practice in 2020. Given that residency placement is a major driver of practice placement, and that AHEC residencies preferentially keep graduates in state, we will also begin to track placement in residencies in North Carolina as a key outcome of North Carolina medical schools.

While we have historically examined NC medical school graduates at five years following graduation per legislative requirements, many physicians are just completing residency or specialty training at this point in their career trajectory and may not have settled in a permanent practice location. This is particularly the case for general surgeons, who complete a five-year residency before entering practice or continuing specialty training. As a result, our results may inflate the numbers of physicians practicing in a particular specialty or in North Carolina. A better metric might be retention at ten years following graduation from an NC medical school. Resources permitting, we will test this metric.

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. Our major emphasis is retention in primary care after completion of residency education.

Retention of Graduates in Primary Care: Class of 2009

The most valuable measure of the choice of primary care careers is retention of graduates in primary care after residency. Table 2 shows the graduates and the percentage that remained in primary care five years (in 2014) after graduation.

The total number of medical graduates in 2009 was 427. Of the 423 graduates in 2009 who are still in training or practice as of 2014, 121 (or 29 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 - 2009. While the percentage of graduates who remained in primary care gradually increased for all NC medical schools during the 1990's, there was a decline starting with 2003 graduates; and the downward trend continues for 2009 graduates. Currently, 43 percent of ECU 2009 graduates have remained in primary care, 32 percent for UNC, 26 percent for WFU and 18 percent for Duke.

Table 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

Table 4 describes medical school graduates remaining in North Carolina. The number of 2009 graduates remaining in NC five years later continues to decline from 137 graduates in 2013 to 131 graduates in 2014 (from 33 to 31 percent), and the number of 2009 graduates in primary care training or practice in NC in 2014 decreased from 69 (2013) to 59 (2014) or from 16 to 14 percent). ECU's Brody School of Medicine graduates continue to show the highest rate of retention in North Carolina overall (52 percent) and in primary care in the state (30 percent).

NC Medical Students – Retention in Rural Areas

Table 5 shows the retention of 2009 graduates in rural counties, primary care, and in/out of NC as of 2014. Out of 131 graduates practicing in primary care in NC in 2014, only 11 of these were in rural counties, (a decrease from 16 graduates in 2013). NC has 54 rural (or non-metropolitan) counties based on the 2013 Office of Management and Budget Core Based Statistical Area definition.

Discussion

A key driver of retention of primary care physicians in North Carolina is the availability of community based primary care residencies in the state. Medical students must go through 3 years of training before being able to practice on their own, and the large majority practice for the rest of their life close to their residencies.[2][3][4] AHEC primary care residencies have a better track record of keeping physicians in the state. Data from the American Medical Association physician master file demonstrate that 50% of active physicians who completed an NC AHEC residency remained in practice in NC, compared to 38% who completed a non-AHEC residency.[5] Unfortunately however, AHEC residencies have grown only minimally, and the large majority of residency positions have been devoted to subspecialty physicians in large hospitals.

There is a national trend away from primary care that is also influencing the medical students in North Carolina. Factors 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; lifestyle choices being made by the current generation of medical students, and, increasingly, students' concerns about the support for primary care in North Carolina. Students are increasingly gravitating to specialties that are more lucrative and also allow them to control their hours and have less call on nights and weekends.

[2] Dorner FH, Burr RM, Tucker SL. The geographic relationships between physicians' residency sites and the locations of their first practices. Acad Med. 1991;66(9):540–4

[3] Seifer SD, Vranizan K, Grumbach K. Graduate medical education and physician practice location. JAMA. 1995;274(9):685–91.

[4] Fagan EB, et. al. Family medicine graduate proximity to their site of training: policy options for improving the distribution of primary care access. Fam Med. 2015;47(2):124-30.

[5] Fraher EP, Spero JC. The State of the Physician Workforce in North Carolina: Overall Physician Supply Will Likely Be Sufficient but Is Maldistributed by Specialty and Geography. Program on Health Workforce Research and Policy, The Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill. August 2015. Accessed 10/15/2015 at http://www.shepscenter.unc.edu/wp-content/uploads/2015/08/MedicalEducationBrief-ShepsCenter-August20151.pdf

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 many fewer play these roles. This trend further depletes the pool of generalists physicians needed to serve North Carolina's growing population; this is particularly acute for adults.

It is important to remember that general surgeons and psychiatrists are critical members of the health care community in rural and underserved communities. Yet, as Tables 6 through 9 demonstrates, low numbers of students choose these disciplines, and few go on to practice in these disciplines in North Carolina.

Several contextual issues are important to underscore. First, there has been rapid consolidation of hospitals and health care systems over the last several years; this has exacerbated the mal-distribution of primary care providers over the last decade. Most health care systems have not developed a workforce strategy for the primary care and population health needs to drive improvement of health of the population. Second, in terms of the pipeline of primary care providers, in addition to the Campbell School of Medicine, many new NP/DNP and PA programs have opened over the last decade. Many of these graduates are potentially available for primary care; we urge systematic tracking of these new providers. Third, the shortage of community preceptor sites for health care clinicians has become acute over the last year; these community sites play a key role in attracting medical students and other professionals into primary care. Finally, there has been significant uncertainty about the future of primary care in the care of Medicaid patients. With the passage of Medicaid reform by the legislature, the roles and opportunities for primary care may clarify.

Conclusion

Our data suggest that the decline of interest in primary care among North Carolina Medical School graduates continues. This decline matches a national trend, and 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 rapid loss of generalists in internal medicine and pediatrics, these trends do not bode well for meeting the future needs for the state.

North Carolina's rural areas continue to have a higher supply of physicians than

comparable rural areas elsewhere in the country, 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, Given the burgeoning need for primary care and population health, however, there will be need for both increased supply and especially better distribution of primary care physicians to meet the goal of improving the health of North Carolinians.

Section I: Medical Students

Table 2
North Carolina Medical Students - Retention in Primary Care Five Years after Graduation
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice with an Initial Residency Choice of Primary Care*	Percent of 2009 Graduates in Training or Practice with an Initial Residency Choice of Primary Care*	Number of 2009 Graduates in Training or Practice in Primary Care** as of 2014	Percent of 2009 Graduates in Training or Practice in Primary Care** as of 2014
Duke	102	48	47%	18	18%
ECU	63	35	56%	27	43%
UNC-CH	154	83	54%	49	32%
Wake Forest	104	52	50%	27	26%
Total	**423**	**218**	**52%**	**121**	**29%**

*2009 Primary Care Residency Specialty includes Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology. Source: Association of American Medical Colleges (AAMC). Internal medicine in this case also includes "medicine - preliminary," which likely overestimates the initial primary care figures.

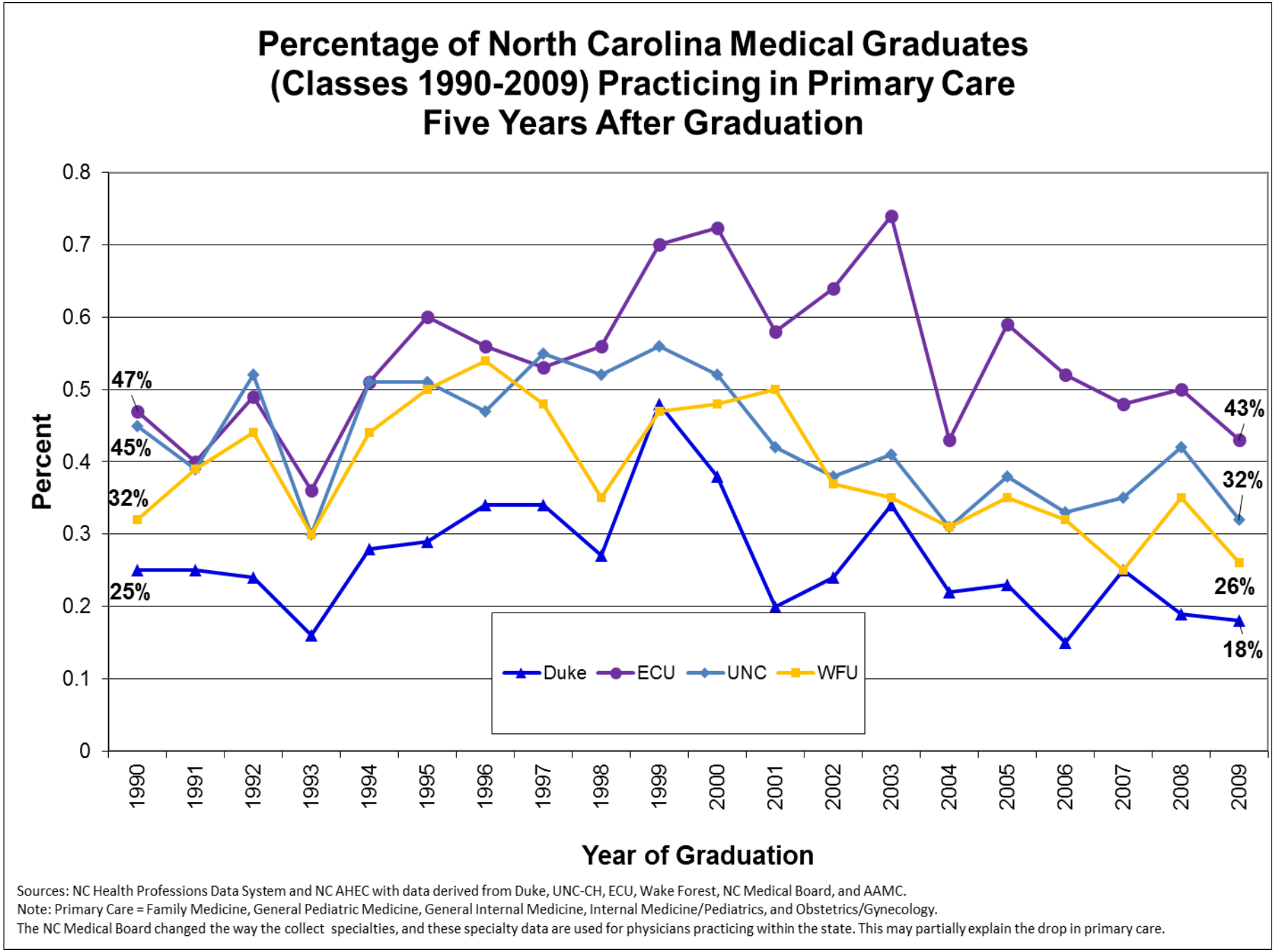
** 2014 Primary care definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include Family Medicine (Family Medicine, Family Medicine-Adolescent Medicine, Family Medicine-Geriatric, Family Medicine-Sports Medicine, General Practice; Internal Medicine (Internal Medicine, Internal Medicine-Geriatric, Infectious Disease, Nephrology, Rheumatology); Pediatrics (Pediatrics, Pediatrics-Adolescent, Pediatric Infectious Disease, Pediatrics Nephrology, Pediatric Rheumatology, Pediatric-Sports Medicine); Internal Medicine-Pediatrics (Internal Medicine-Pediatrics, Internal Medicine-Adolescent Medicine); OBGYN (Obstetrics & Gynecology, Obstetrics, Gynecology, Maternal-Fetal Medicine).

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
North Carolina Medical Board

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

Figure 1



Sources: NC Health Professions Data System and NC AHEC with data derived from Duke, UNC-CH, ECU, Wake Forest, NC Medical Board, and AAMC.
Note: Primary Care = Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology.
The NC Medical Board changed the way the collect specialties, and these specialty data are used for physicians practicing within the state. This may partially explain the drop in primary care.

Table 3
State Supported North Carolinians Attending the Duke and Wake Forest Schools of Medicine
Choice and Retention in Primary Care Specialties
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014			Number of 2009 Graduates in Training or Practice in Primary Care** as of 2014				Number of 2009 State-Supported Graduates in Training or Practice as of 2014				Number of 2009 State-Supported Graduates in Training or Practice in Primary Care** as of 2014			
	Total	in NC		Total		in NC		Total		In NC		Total		In NC	
Duke	102	23	23%	18	18%	5	5%	14	14%	5	36%	1	7%	1	7%
Wake Forest	104	23	22%	27	26%	10	10%	34	33%	12	35%	9	26%	5	15%
Total	206	46	22%	45	22%	15	7%	48	23%	17	35%	10	21%	6	13%
		(% of total grads)								*(% of total state-supported grads)*					

*2009 Primary Care Residency Specialty includes Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology. Source: Association of American Medical Colleges (AAMC). Internal medicine in this case also includes "medicine - preliminary," which likely overestimates the initial primary care figures.

** 2014 Primary care definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include Family Medicine (Family Medicine, Family Medicine-Adolescent Medicine, Family Medicine-Geriatric, Family Medicine-Sports Medicine, General Practice; Internal Medicine (Internal Medicine, Internal Medicine-Geriatric, Infectious Disease, Nephrology, Rheumatology); Pediatrics (Pediatrics, Pediatrics-Adolescent, Pediatric Infectious Disease, Pediatrics Nephrology, Pediatric Rheumatology, Pediatric-Sports Medicine); Internal Medicine-Pediatrics (Internal Medicine-Pediatrics, Internal Medicine-Adolescent Medicine); OBGYN (Obstetrics & Gynecology, Obstetrics, Gynecology, Maternal-Fetal Medicine).

Sources:

Duke Office of Medical Education
Wake Forest University SOM Office of Student Affairs
NC State Education Assistance Authority
Association of American Medical Colleges
North Carolina Medical Board

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

APPENDIX Q

Table 4
North Carolina Medical Students-Primary Care Retention in NC
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in Primary Care** in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in Primary Care** in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in Primary Care** in Rural*** Counties in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in Primary Care** in Rural*** Counties North Carolina as of 2014
Duke	102	23	23%	5	5%	0	0%
ECU	63	33	52%	19	30%	2	3%
UNC-CH	154	52	34%	25	16%	3	2%
Wake Forest	104	23	22%	10	10%	0	0%
Total	**423**	**131**	**31%**	**59**	**14%**	**5**	**1%**

*2009 Primary Care Residency Specialty includes Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology. Source: Association of American Medical Colleges (AAMC). Internal medicine in this case also includes "medicine - preliminary," which likely overestimates the initial primary care figures.

** 2014 Primary care definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include Family Medicine (Family Medicine, Family Medicine-Adolescent Medicine, Family Medicine-Geriatric, Family Medicine-Sports Medicine, General Practice; Internal Medicine (Internal Medicine, Internal Medicine-Geriatric, Infectious Disease, Nephrology, Rheumatology); Pediatrics (Pediatrics, Pediatrics-Adolescent, Pediatric Infectious Disease, Pediatrics Nephrology, Pediatric Rheumatology, Pediatric-Sports Medicine); Internal Medicine-Pediatrics (Internal Medicine-Pediatrics, Internal Medicine-Adolescent Medicine); OBGYN (Obstetrics & Gynecology, Obstetrics, Gynecology, Maternal-Fetal Medicine).

***"Rural" is based on 2013 Core-Based Statistical Area (CBSA) definitions, and includes counties that are "micropolitan" and "outside of CBSAs." Using this definition, NC has 54 rural counties.

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
North Carolina Medical Board
US Census Bureau, Office of Management & Budget

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

APPENDIX Q

Table 5
North Carolina Medical Students-Retention in Rural Practice
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in Rural*** Counties as of 2014	Percent of 2009 Graduates in Training or Practice in Rural*** Counties as of 2014	Number of 2009 Graduates in Training or Practice in Rural*** Counties in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in Rural*** Counties in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in Primary Care** in Rural*** Counties in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in Primary Care** in Rural*** Counties North Carolina as of 2014
Duke	102	23	23%	3	3%	1	1%	0	0%
ECU	63	33	52%	5	8%	4	6%	2	3%
UNC-CH	154	52	34%	5	3%	3	2%	3	2%
Wake Forest	104	23	22%	5	5%	3	3%	0	0%
Total	**423**	**131**	**31%**	**18**	**4%**	**11**	**3%**	**5**	**1%**

*2009 Primary Care Residency Specialty includes Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology. Source: Association of American Medical Colleges (AAMC). Internal medicine in this case also includes "medicine - preliminary," which likely overestimates the initial primary care figures.
** 2014 Primary care definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include Family Medicine (Family Medicine, Family Medicine-Adolescent Medicine, Family Medicine-Geriatric, Family Medicine-Sports Medicine, General Practice; Internal Medicine (Internal Medicine, Internal Medicine-Geriatric, Infectious Disease, Nephrology, Rheumatology); Pediatrics (Pediatrics, Pediatrics-Adolescent, Pediatric Infectious Disease, Pediatrics Nephrology, Pediatric Rheumatology, Pediatric-Sports Medicine); Internal Medicine-Pediatrics (Internal Medicine-Pediatrics, Internal Medicine-Adolescent Medicine); OBGYN (Obstetrics & Gynecology, Obstetrics, Gynecology, Maternal-Fetal Medicine).
***"Rural" is based on 2013 Core-Based Statistical Area (CBSA) definitions, and includes counties that are "micropolitan" and "outside of CBSAs." Using this definition, NC has 54 rural counties.

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
North Carolina Medical Board
US Census Bureau, Office of Management & Budget

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

Table 6

North Carolina Medical Students - Retention in General Surgery
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice with an Initial Residency Choice of General Surgery	Percent of 2009 Graduates in Training or Practice with an Initial Residency Choice of General Surgery	Number of 2009 Graduates in Training or Practice in General Surgery* as of 2014	Percent of 2009 Graduates in Training or Practice in General Surgery* as of 2014
Duke	102	11	11%	4	4%
ECU	63	3	5%	1	2%
UNC-CH	154	18	12%	7	5%
Wake Forest	104	12	12%	4	4%
Total	**423**	**44**	**10%**	**16**	**4%**

*2014 General Surgery definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include General Surgery, Abdominal Surgery, Colon & Rectal Surgery, Critical Care Surgery, Head and Neck Surgery, Oncology Surgery, Pediatric Surgery, Transplant Surgery, Trauma Surgery, and Vascular Surgery.

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
North Carolina Medical Board

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

Table 7
North Carolina Medical Students - Retention in General Surgery in NC
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in General Surgery* in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in General Surgery* in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in General Surgery* in Rural** Counties in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in General Surgery* in Rural** Counties North Carolina as of 2014
Duke	102	23	23%	1	1%	0	0%
ECU	63	33	52%	1	2%	0	0%
UNC-CH	154	52	34%	2	1%	0	0%
Wake Forest	104	23	22%	1	1%	1	1%
Total	**423**	**131**	**31%**	**5**	**1%**	**1**	**0%**

*2014 General Surgery definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include General Surgery, Abdominal Surgery, Colon & Rectal Surgery, Critical Care Surgery, Head and Neck Surgery, Oncology Surgery, Pediatric Surgery, Transplant Surgery, Trauma Surgery, and Vascular Surgery.
**"Rural" is based on 2013 Core-Based Statistical Area (CBSA) definitions, and includes counties that are "micropolitan" and "outside of CBSAs." Using this definition, NC has 54 rural counties.

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
North Carolina Medical Board

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

Table 8
North Carolina Medical Students - Retention in Psychiatry
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice with an Initial Residency Choice of Psychiatry	Percent of 2009 Graduates in Training or Practice with an Initial Residency Choice of Psychiatry	Number of 2009 Graduates in Training or Practice in Psychiatry* as of 2014	Percent of 2009 Graduates in Training or Practice in Psychiatry* as of 2014
Duke	102	3	3%	3	3%
ECU	63	2	3%	2	3%
UNC-CH	154	7	5%	7	5%
Wake Forest	104	4	4%	5	5%
Total	**423**	**16**	**4%**	**17**	**4%**

*2014 Psychiatry definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include Psychiatry, Child and Adolescent Psychiatry, Psychoanalysis, Psychiatry/Geriatric, Family Medicine-Psychiatry, and Internal Medicine-Psychiatry.

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
North Carolina Medical Board

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

Table 9
North Carolina Medical Students - Retention in Psychiatry in NC
2009 Graduates

School	Number of 2009 Graduates in Training or Practice as of 2014	Number of 2009 Graduates in Training or Practice in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in Psychiatry* in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in Psychiatry* in North Carolina as of 2014	Number of 2009 Graduates in Training or Practice in Psychiatry* in Rural** Counties in North Carolina as of 2014	Percent of 2009 Graduates in Training or Practice in Psychiatry* in Rural** Counties North Carolina as of 2014
Duke	102	23	23%	1	1%	0	0%
ECU	63	33	52%	0	0%	0	0%
UNC-CH	154	52	34%	2	1%	0	0%
Wake Forest	104	23	22%	2	2%	0	0%
Total	**423**	**131**	**31%**	**5**	**1%**	**0**	**0%**

*2014 Psychiatry definitions are based on NC Medical Board licensure data (for NC physicians) and AAMC data (for non-NC physicians) and include Psychiatry, Child and Adolescent Psychiatry, Psychoanalysis, Psychiatry/Geriatric, Family Medicine-Psychiatry, and Internal Medicine-Psychiatry.
**"Rural" is based on 2013 Core-Based Statistical Area (CBSA) definitions, and includes counties that are "micropolitan" and "outside of CBSAs." Using this definition, NC has 54 rural counties.

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
North Carolina Medical Board

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

Limitations

The information used in this analysis to determine a medical graduate's initial specialty choice for residency and to determine retention in primary care comes from different sources. When calculating retention in primary care five years after graduation, data from the AAMC are used to determine initial choice of residency. AAMC does not differentiate between internal medicine and medicine-preliminary, so the data may appear to be inflated for initial residency choice of primary care. Two data sources are used to determine current practice or training area. For physicians practicing in North Carolina, NC Medical Board (NCMB) data are used to determine the physician's current self-reported primary area of practice. For physicians practicing outside of North Carolina, AAMC data are used to determine current practice or training area. AAMC data are based on the AMA Physician Masterfile.

Beginning with the class of 2006 all MDs graduating in a year, regardless of month, are counted with that year's graduates.

Primary Care Tables:
Primary care coding was revised in 2014 to reflect more accurate aggregation of AMA minor codes to AMA major codes. Primary care residency specialties are defined by legislation passed by the NC General Assembly in 1993 (Senate Bill 27/ House Bill 729) and include family medicine, general internal medicine, general pediatric medicine, internal medicine-pediatrics, and obstetrics and gynecology. Specialties included under the definitions of current practice specialties for primary care, psychiatry, and general surgery were revised in 2014 and reviewed by practicing clinicians for accuracy.

"Primary Care" is defined for both initial specialty of residency training (identified using AAMC data and denoted by the use of one asterisk) and for current practice or training area (identified using either NCMB data for physicians in NC and AAMC data for physicians practicing out of state and denoted by the use of two asterisks). More specialties are included under the definition of "primary care" for current practice or training area than for specialty of residency training because physicians may specialize within their primary care area of practice following training. For example, a physician who entered residency training in "pediatrics," and following completion of training reported a current practice area of "adolescent medicine" would be counted as a primary care physician.

General Surgery Tables:
For tables calculating retention in general surgery five years after graduation, it is important to note that surgical residencies are currently a minimum of five years, and students who select an initial specialty of general surgery often transition to more specialized surgical training.