UNIVERSITY OF NORTH CAROLINA
A SYSTEM OF HIGHER LEARNING

MEETING OF THE BOARD OF GOVERNORS
Committee on Educational Planning, Policies, and Programs

January 25, 2018 at 11:00 a.m.
University of North Carolina General Administration
Center for School Leadership Development, Room 128
Chapel Hill, North Carolina

AGENDA

B-1. Educator Preparation Program Review Report ..... Beth Ann Bryan and Martha Hougens

B-2. Proposed Changes to Licensure Process ..... Daniel Harrison

B-3. Health Professions Community Precepting Working Group Report ..... Warren Newton

B-4. Other Business ..... Anna Nelson
   a. Medical Education Outcome Reports

B-5. Adjourn

Additional Information Available

B-3. AHEC Full Report: Community Precepting Report
B-3. PowerPoint: Towards a Health Professional Pipeline: Recommendations from Precepting Work Group and a Broader Strategy for Primary Care
B-4. Workforce Outcomes of North Carolina Medical School Graduates
B-4. The Workforce Outcomes of Physicians Completing Residency Programs in North Carolina

AGENDA ITEM

B-1. Educator Preparation Program Review Report .....Beth Ann Bryan and Marty Hougen

Situation: In the spring of 2017, University of North Carolina General Administration was awarded a grant by the Belk Foundation to conduct an initial review of the 14 undergraduate teacher preparation programs in the University of North Carolina system. UNC General Administration a team of experts in early literacy to conduct site visits and interviews with deans, faculty, and students at the 14 education schools. The resulting report is available in your board materials.

Background: The University of North Carolina plays a critical role in improving our state's public K-12 schools through the preparation of public school teachers. Collectively, our 14 undergraduate teacher preparation programs graduate 4,000 teaching candidates per year, and nearly 40 percent of public school teachers are graduates of a UNC institution.

As a growing state with a dynamic economy, that role is more important than ever. While national assessment results show that North Carolina has made gains on reading proficiency rates, in 2015, under 40 percent of fourth graders were proficient in reading. Significant achievement gaps remain by race, income, and geography.

In light of these increasing demands, the University of North Carolina has an opportunity to amplify its sizable contribution to student achievement in North Carolina's public schools. To identify areas of excellence, challenges and obstacles, and opportunities for improvement, the University of North Carolina General Administration applied for a grant from the Belk Foundation to commission a review of teacher education programs by external experts with expertise in early literacy.

The team of consultants will summarize the results of that review and take questions from the committee.

Assessment: The issues examined in this report will guide future discussions in this committee about potential policy reforms and special initiatives.

Action: This item is for information only.

The University of North Carolina General Administration
Educator Preparation Program Review Report

Beth Ann Bryan, Martha "Marty" Hougen, Karen Nelson

EXECUTIVE SUMMARY

Strong public PK-12 schools are critical to North Carolina's educated citizenry and growing economy. The University of North Carolina (UNC) plays a significant role in ensuring PK–12 student achievement and strives to prepare educators to effectively teach diverse populations of students. Nearly 40 percent of public school teachers in North Carolina are graduates of a UNC institution, and research suggests that UNC-prepared teachers perform better than those who enter the profession through most other routes.

There is room for improvement, however. While national assessments indicate that North Carolina has made gains in fourth grade reading achievement, results for eighth graders have remained stagnant. And stubborn achievement gaps by race, ethnicity, and income remain. UNC's educator preparation programs also find themselves in an era of increased expectations, with new state legislation that will increase accountability for results and create greater competition in teacher preparation.

Through continuous, data-driven improvement, the fourteen Educator Preparation Programs (EPPs) that certify bachelor's degree recipients to teach in elementary and middle grades can be leaders in the state's efforts to prepare more great teachers. As a first step, President Margaret Spellings received a grant from the Belk Foundation to commission this review of educator preparation programs, with a particular focus on literacy.

The reviewers were tasked with visiting each of the fourteen UNC system institutions that offer undergraduate degrees leading to teacher licensure in elementary and middle grades to interview deans and their leadership teams, faculty, and candidates to gather information. The areas for focus covered by the review included the following:

- Program highlights, program cohesiveness, and course alignment
- Requirements for program admission
- Relationships with school districts
- Research-based curriculum
- Alignment with state content standards
- Accountability for results and efforts toward continuous improvement

The reviews were intended to be a snapshot, an overall look at the programs as a whole, highlighting areas that could be considered for further study. Limitations precluded making definitive judgments about any one program. For example, each institution selected persons for the reviewers to interview, and the criteria for and number of interviewees varied. Also, syllabi were solicited and reviewed but syllabi do not necessarily reflect all material that was taught or how it was taught.

KEY FINDINGS

All teacher candidates are expected to pass the *Praxis* CORE Academic Skills for Educators, tests that measure the reading, writing, and math skills. Many faculty expressed concern that a number of

students arrive in college unable to pass these basic skills tests, even on a second or third try. Therefore, some students find themselves at the end of their preparation programs, still not able to pass the *Praxis* and thus not able to complete student teaching and be eligible for certification.

The reviewers found that all institutions reported generally good relationships with their partner districts that were the recipients of the majority of their graduates, and it benefitted both parties to work together. However, the quality and structure of the relationships seemed to vary, and there was some disconnect with what approaches the colleges were teaching candidates and what practices the districts were promoting.

Field experiences varied greatly. Some schools began field experiences in the freshman year, others did not begin until the junior year. One of the items mentioned most often by candidates at all the schools was the importance of being placed in the schools earlier and more often. They indicated that field experiences helped them better understand their coursework.

The *North Carolina Standard Course of Study* is the state-mandated set of content standards that delineates what students should know and be able to do in all grade levels and subjects. UNC EPPs do incorporate the state content standards into coursework. However, in some cases, it appeared that although standards were utilized in lesson planning, candidates were not always given a full and complete overview of the state standards, what they contain, what is expected of teachers in covering these in a timely fashion, and how to work from the standards to plan instruction and assess student growth.

Program requirements and coursework varied in the colleges in the number of classes required, including those addressing literacy, theory, culture, and diversity. Candidates were clear that they found the courses that explicitly taught instructional strategies for teaching reading, writing, and mathematics the most helpful to them. All groups of candidates were asked how they would instruct a student having trouble reading, and, in almost all instances, candidates could not articulate specific strategies or practices they would use.

The amount of time and number of courses allotted to literacy instruction were highly varied across the campuses. The structure and content of the literacy courses varied as well, particularly in the integration of research-based practices, alignment of the literacy courses, opportunities to practice applying instructional methods, and field experiences.

RECOMMENDATIONS

1. Assign an individual in the UNCGA office to serve as the liaison with the colleges of education.
2. Develop systems to ensure that students acquire the knowledge and skills required to pass the assessments required for certification.
3. Increase enrollment in the colleges of education by developing effective recruitment strategies.
4. Incorporate the North Carolina Standard Course of Study for K–12 students into the daily work of teacher education candidates.
5. Align teacher education programs for kindergarten teachers with the state standards.
6. Sponsor meetings to address concerns of the colleges and provide faculty with opportunities for continued professional development.
7. Help facilitate early, deliberate, scaffolded, and aligned field experiences.
8. Review alignment of required coursework with evidence-based practices.

NEXT STEPS for UNCGA

1. Establish and convene a collaborative leadership group of representatives of EPPs to work with UNCGA to consider the recommendations.
2. Facilitate access to state and national expertise and resources.
3. Provide a venue for EPPs and UNCGA to collaborate to improve success on tests necessary for certification and on other accreditation requirements and to work with the Department of Public Instruction on state initiatives and state standards.
4. Convene deans and leadership to discuss topics of mutual interest, such as developing dual credential programs, more effectively preparing candidates to work with students who are struggling, and implementing new legislative requirements.
5. Increase collaboration with local districts and community colleges to recruit students and to help candidates pass the basic skills exams.
6. Establish future studies on leadership preparation, field experiences, and recruitment programs.
7. Help EPPs better integrate current research into their programs.
8. Explore resources available from state and national centers to support teacher preparation program improvement.

The challenges discussed in this report are not unique to North Carolina. Most states are in the process of generating ongoing improvements within their teacher preparation programs, addressing many of the issues identified in this review. With strong partnerships between the UNCGA and interested universities, North Carolina has the opportunity to lead the nation in improving teacher preparation and student achievement.

For further information, please contact: Andrew P. Kelly, Senior Vice President for Strategy and Policy, UNC General Administration.

The University of North Carolina General Administration
Educator Preparation Program Review Report

About the Reviewers

Beth Ann Bryan, B.A., M.Ed.
Beth Ann Bryan is an education consultant from Austin, Texas. She has had a long career in public education, including teaching in elementary classrooms, working with schools and families while in a private psychological practice, and working for teacher preparation programs. She served in both state and federal government roles and as the Senior Advisor to the US Secretary of Education, as a consultant to education-related clients at a national and state level, and as an initial member of the National Board for Education Sciences, advising the Institute for Education Sciences. Recently, she completed service as the Interim Director of Education for the George W. Bush Institute and continues to work as an advisor to the Meadows Center for Preventing Educational Risk at The University of Texas at Austin.

Martha "Marty" Hougen, Ph.D.
Dr. Hougen is the Teacher Education Professional Development Leader with the Collaboration for Effective Educator Development, Accountability, and Reform Center (CEEDAR Center) at the University of Florida. The CEEDAR Center works with states to develop a systems-wide approach to improve the achievement of students who struggle with learning. Dr. Hougen works with Educator Preparation Programs to ensure teachers and leaders are prepared to work with students with diverse needs. Her previous position was as the principal investigator for the Texas Higher Education Collaborative, working with educator preparation programs throughout Texas. Dr. Hougen presents at state and national conferences, publishes in peer-reviewed journals, and has written two textbooks on reading.

Karen Nelson, M.S., CCC/SLP
Karen Nelson serves as the Executive Director for the Institute for Public School Initiatives at the University of Texas at Austin. Ms. Nelson is a member of the State Leadership Team for the Texas Literacy Initiative supporting the implementation of the Striving Readers Comprehensive Literacy federal grant. Previously Ms. Nelson was Vice President of Field Implementation Services at Voyager Expanded Learning. She also worked with the Texas Statewide Initiatives on the Texas Teacher Reading Academies and as a speech-language pathologist and reading specialist in private practice and public schools. Ms. Nelson is experienced in building consensus, planning and developing curriculum coaching infrastructure and professional learning, and working with school district administrators throughout the country in planning effective systems for reading instruction and intervention.

AGENDA ITEM

B-2. Proposed Changes to Licensure Process ..... Daniel Harrison

Situation: The Board of Governors of the University of North Carolina is charged under North Carolina General Statutes Section 116-15 with responsibility for licensing nonpublic educational institutions to conduct post-secondary degree activity in North Carolina.

Background: The Licensure and State Authorization Division evaluates applications from nonpublic and out-of-state public institutions wishing to conduct post-secondary degree activity in North Carolina. The division has reviewed and proposed revisions to existing policies and procedures with goals of streamlining and clarifying procedures, improving oversight during a time of significant change for private institutions, and focusing resources on issues of practical concern to North Carolina students. The changes to regulation/guideline documents are for information only and the committee does not need to vote on them. The changes for policy documents require a vote.

Assessment: These proposals help to streamline procedures for authorizing non-public and out-of-state institutions, which will increase efficiency and provide more effective processing and oversight.

Action: This item requires a vote by the committee and subsequently by the full Board at its March meeting.

400.4.1
Adopted 02/08/74
Amended 02/13/76
Amended 09/13/85
Amended 01/09/98
Amended 11/11/04
Amended 05/27/16
Amended __/__/18*

Policy on Standards for Licensure of Nonpublic Degree Granting Postsecondary Activity

I. Purpose. This policy implements N.C. Gen. Stat. § 116-15 (hereinafter G.S.), relating to the standards for licensure for nonpublic degree granting postsecondary activity in North Carolina.

II. Definitions

A. "Postsecondary degree" means a credential conferring on the recipient thereof the title of "Associate," "Bachelor," "Master," or "Doctor," or an equivalent title, signifying educational attainment based on:

1. Interactions between faculty and students following a coherent course of study with specified student outcomes; and/or

2. A coherent course of study in which the student and instructor are not in the same place delivered either synchronously or asynchronously with specified student outcomes and faculty-student interaction mediated through electronic means; or

3. A combination of the foregoing; provided, that "postsecondary degree" shall not include any honorary degree or other so-called 'unearned' degree. The content and rigor of the curriculum for the degree must be at a level to assure an education of good quality.

B. "Institution" means any sole proprietorship, group, partnership, venture, society, company, corporation, school, college, or university that engages in, purports to engage in, or intends to engage in any type of postsecondary degree activity.

C. "Nonpublic institution" means an institution that is not a constituent institution of the University of North Carolina or the North Carolina Community College System.

D. "Instruction" means delivery of a coherent and formal plan of study constructed for students so that they can demonstrate specific learning outcomes.

E. "Postsecondary degree activity" means:

1. Awarding a postsecondary degree; or

2. Conducting or offering study, experience, or testing for an individual or certifying prior successful completion by an individual of study, experience, or testing, under the representation that the individual successfully completing the study, experience, or testing will receive credit, at least in part, that may be used toward a postsecondary degree.

Postsecondary degree activity includes conduct with respect to either a complete postsecondary degree program or any study, experience or testing represented as creditable toward a postsecondary degree.

*Supersedes Section 400.4.1, originally entitled, "Policy on Licensing Nonpublic Institutions to Conduct Postsecondary Degree Activity in North Carolina," adopted February 8, 1974, and last amended May 27, 2016.

F. "Publicly registered name" means the name of any sole proprietorship, group, partnership, venture, society, company, corporation, school, college, or institution that appears as the subject of any Articles of Incorporation, Articles of Amendment, or Certificate of Authority to transact business or to conduct affairs, properly filed with the Secretary of State of North Carolina and currently in force.

G. "Board" means the Board of Governors of the University of North Carolina.

III. Exemption from Licensure

A. Institutions Continuously Conducting Postsecondary Degree Activity in North Carolina since July 1, 1972. Any institution that has been continuously conducting postsecondary degree activity in this State under the same publicly registered name or series of publicly registered names since July 1, 1972, shall be exempt from the provisions for licensure upon presentation to the Board of Governors of information acceptable to the Board to substantiate such postsecondary degree activity and public registration of the institution's names. Any institution that, pursuant to a predecessor statute, had presented to the Board proof of activity and registration such that the Board granted exemption from licensure, shall continue to enjoy such exemption without further action by the Board. [G.S. 116-15(c)]

B. Programs Relative to Religious Education. No institution shall be subject to licensure under this section with respect to postsecondary degree activity based upon a program of study, equivalent experience, or achievement testing, the institutionally planned objective of which is the attainment of a degree in theology, divinity, or religious education or in any other program of study, equivalent experience, or achievement testing that is designed by the institution primarily for career preparation in a religious vocation. This exemption shall be extended to any institution with respect to each program of study, equivalent experience, and achievement test that the institution demonstrates to the satisfaction of the Board should be exempt from licensure requirements. [G.S. 116-15(d)]

C. Institutions Conducting Postsecondary Degree Activity within the Military. To the extent that an institution undertakes postsecondary degree activity on the premises of military posts or reservations located in this State for military personnel stationed on active duty there, or their dependents, or employees of the military, the institution shall be exempt from licensure requirements. [G.S. 116-15(e)] If the institution offers or conducts postsecondary degree activity for other persons, the institution shall be subject to licensure. Institutions declared exempt under this section shall present annual reports to General Administration describing degree activity and enrollments.

D. Distance Education Conducted Pursuant to a State Authorization Reciprocity Agreement. Any institution conducting postsecondary degree activity in North Carolina pursuant to a State Authorization Reciprocity Agreement to which the State of North Carolina is a party shall be exempt from licensure requirements.

IV. Standards for Licensure. To be licensed to conduct postsecondary degree activity in the State of North Carolina, a nonpublic postsecondary educational institution shall satisfy the Board of Governors that it meets the standards as specified by G.S. 116-15(f) and has demonstrated that its academic programs meet the Board of Governors' standards for an education of good quality.

A. Standard 1 (Charter). The institution shall be state-chartered. If chartered by a state or sovereignty other than North Carolina, the institution shall also obtain a Certificate of Authority to Transact Business or to Conduct Affairs in North Carolina issued by the Secretary of State of North Carolina. [G.S. 116-15(f)(1)]

1. Charter. The institution is chartered by the Secretary of State of North Carolina and has been issued a Certificate of Authority to Transact Business or to Conduct Affairs in North Carolina, if applicable.

2. Availability of articles of incorporation. A copy of the articles of incorporation or other relevant business formation documents of the institution and all amendments thereto must be on file in the office of the chief executive officer of the institution and available for

review on request during normal working hours by any person. If the institution is chartered outside North Carolina, a copy of the Certificate of Authority to Transact Business or to Conduct Affairs in North Carolina must also be on file in the office of the chief executive officer and be available for review by any person.

3. Publication of contact information. The address, telephone number, email address, website, and other pertinent contact information of the institution, and of the principal office of the corporation must be published in a manner accessible to students, prospective students, and the public.

4. Availability of articles of incorporation of controlling corporation(s). If the institution is controlled, directly or indirectly, by one or more other business entities, a copy of the governing documents and amendments thereto of each such business entity must also be on file in the office of the chief executive officer of the institution and be available for review by any person.

5. Publication of governing board membership of controlling corporation(s). The membership of the governing board of the institution as well as the name and membership of the governing board of any other corporation or corporations, which may control, directly or indirectly, the institution must be published in a manner accessible to students, prospective students, and the public.

B. Standard 2 (Period of Operation). The institution must have been conducting postsecondary degree activity in a state or sovereignty other than North Carolina during consecutive, regular-term academic semesters, exclusive of summer sessions, for at least the two years immediately prior to submitting an application for licensure under this section, or must have been conducting with enrolled students, for a like period in this State or some other state or sovereignty, postsecondary educational activity not related to a postsecondary degree; provided, that an institution may be relieved temporarily of this standard under the conditions set forth herein. [G.S. 116-15(f)2 and G.S. 116-15(i)]

1. Availability of interim permit. An institution which meets standards for licensure except for having conducted postsecondary degree activity for at least the two years immediately prior to submitting an application for licensure may be granted an interim permit to conduct postsecondary degree activity if the institution can demonstrate stability, experience, reputation, and performance which two years of operation would normally denote.

2. Review of interim permit. Review of an institution's interim permit may be conducted at any time to determine whether the institution demonstrates compliance with these standards.

C. Standard 3 (Program of Study). The substance of each course, program of study, equivalent experience, or achievement test must be such as may reasonably and adequately achieve the stated objective for which the study, experience, or test is offered in order to be certified as successfully completed. [G.S. 116-15(f)(3)].

1. Support of mission. The program of study offered by an institution must reflect and support the mission of the institution and be reasonably designed to achieve the stated objectives. The academic program must ordinarily include provisions for a general education curriculum and specific fields of study at the associate, baccalaureate, or advanced level as appropriate for the mission of the institution.

2. Courses. The institution shall have an academic curriculum that is designed to reasonably and adequately achieve its mission and educational objectives. The institution shall demonstrate that each academic program for which academic credit is awarded is: (a) approved by the faculty and the administration; and (b) evaluated annually to determine its effectiveness. Course objectives, prerequisites, the plan of instruction, requirements, and procedures for evaluation must be clearly stated and available to current and prospective

students in a written course syllabus. An institution must provide for annual evaluation of course and program effectiveness including assessment of student learning, retention, and graduation rates, and student and faculty satisfaction.

3. Distance education. Academic standards for courses delivered off-campus or electronically must be the same as for courses delivered at the institution where they originate. The quality and content of each course, regardless of the mode of delivery, must be such as may reasonably and adequately achieve the stated objective. Appropriate data must be used to determine comparability. Such reviews are to demonstrate that student learning outcomes and satisfaction in distance courses delivered electronically are comparable to student learning outcomes and satisfaction in courses offered at the campus where they originate. The technology being used must be appropriate to meet course objectives. Instruction employing distance-learning technology must ensure appropriate interaction between students and faculty and among students.

4. General education. If the institution offers associates or bachelor's degrees, or credit which may be used towards associates or bachelor's degrees, then the institution shall offer a general education program at the collegiate level that is a substantial component of each undergraduate degree, ensures breadth of knowledge, and is based on a coherent rationale. One or more courses, or their equivalencies, shall be taken from each of humanities/fine arts, social/behavioral sciences, and natural science/mathematics. The institution shall identify appropriate general education competencies, and shall provide evidence that graduates have attained those competencies. If the institution requires prior completion of a general education program as a condition of admission to an associates or bachelor's degree program, then the institution shall have a defined and published policy for evaluating, awarding and accepting credit for academic instruction, regardless of its mode of delivery.

5. Duration and intensity. The program of instruction must include educational activities extending over a sufficient period of time and in sufficient intensity to fulfill the mission and academic goals of the institution. The academic year, regardless of its organization, is ordinarily at least 30 weeks in duration.

6. Associate degree. Each educational program leading to an associate degree shall include a general education component at the collegiate level that is a substantial component of each degree, ensures breadth of knowledge, and is based on a coherent rationale. For degree completion in associate programs, the general education component constitutes a minimum of 15 semester hours or the equivalent. The associate degree program normally consists of courses carrying a minimum of 60 semester credit hours or 90 quarter hours or the equivalent in instructional activities as measured by the institution. The associate degree program normally requires full-time attendance for two academic years or the equivalent but an institution may award the associate degree to students who have completed the course requirements at an accelerated pace or can otherwise demonstrate that they have met the measurable objectives of the program.

The following associate degree designations may be awarded:

a. The Associate in Arts (A.A.) degree. Awarded to those who successfully complete programs that emphasize the liberal arts and/or the fine and performing arts. Programs must meet the general education requirements and provide for substantial additional work in the liberal, fine or performing arts. Such programs, if transfer-oriented, may need to contain additional requirements. The general education core is not directed toward specialized study or specific occupational or professional objectives.

b. The Associate in Science (A.S.) degree. Awarded to those who successfully complete programs which emphasize mathematics and/or the biological or physical sciences and which meet the general education requirements of this degree. In addition to meeting the general education requirements for an associate degree, substantial work must be done in mathematics, and/or the biological and physical

sciences. Such programs are designed to serve both career and transfer objectives. Such programs, if transfer-oriented, may need to contain additional requirements.

c. The Associate in Applied Science (A.A.S.) degree. Awarded to those who successfully complete programs which emphasize preparation in the applied arts and sciences for careers, typically at the technical or semi-professional level. Not less than 15 semester credit hours or 23 quarter hours in general education and not less than 30 semester credit hours or 45 quarter hours in the area of specialized preparation are required.

7. Baccalaureate degree. Each program of instruction leading to a baccalaureate degree shall include a general education component at the collegiate level that is a substantial component of each undergraduate degree, ensures breadth of knowledge, and is based on a coherent rationale. A minimum of 30 semester hours or the equivalent is required for a general education course of study. The credit hours are to be drawn from, and include at least one course in each of the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. The general education course work shall not focus on narrow skills, techniques, or procedures relative to a particular occupation or career. Institutions must present a written justification and rationale for course equivalency. Additionally, baccalaureate degree programs must include clearly defined requirements for majors in academic disciplines. Baccalaureate degree programs normally consist of courses carrying a minimum of 120 semester credit hours or 180 quarter hours or the equivalent in other measurement used by the institution. Normally full-time attendance for four academic years or the equivalent in part-time attendance, independent study, work study, or other similar programs are required, but institutions may award the baccalaureate degree to students who have completed the credit requirements at an accelerated pace or can otherwise demonstrate that they have met the measurable objectives of the program.

8. Graduate degree. An institution's graduate programs are progressively more advanced in academic content than undergraduate programs. The institution shall ensure that its graduate instruction and resources foster independent learning, enabling the graduate to contribute to a profession or field of study. The majority of credits toward a graduate or a postbaccalaureate professional degree are earned through the institution awarding the degree. In the case of graduate and postbaccalaureate professional degree programs offered through joint, cooperative, or consortia arrangements, the student earns a majority of credits from the participating institutions. A graduate or post-baccalaureate degree normally represents the completion of a program beyond the baccalaureate level of one or more academic years of full-time course work or the equivalent in part-time attendance, independent study, work-study, or other similar programs. An institution may award a graduate degree to students who have completed the requirements of a graduate program at an accelerated pace or can otherwise demonstrate that they have met the measurable objectives of the program.

The following graduate degrees may be awarded:

a. The master's degree. Awarded to those who successfully complete a program beyond the baccalaureate level in the arts and sciences, or professional fields normally requiring full-time study for not less than one nor more than two academic years. Master's degrees usually require a minimum of 30 semester credit hours.

b. The intermediate degree (designated variously, e.g., specialist in professional education, engineer in engineering, and candidate or licentiate in liberal arts). Awarded to those who successfully complete programs at least one academic year beyond the master's level but who do not reach the doctoral level. Normally, such programs qualify persons as highly knowledgeable and skilled in given fields rather than competent in carrying out independent research and scholarly work.

c. The doctoral degree. Awarded to those who successfully complete programs requiring three or more academic years of full-time graduate study beyond the

baccalaureate level and demonstrate a capacity to do independent work. Such demonstration may take the form of completed research (doctor of philosophy), musical composition or performance (doctor of musical arts), clinical competence (doctor of medicine), or the knowledge and capacity to analyze legal problems (juris doctor). The latter two degree programs, along with dentistry, pharmacy, and veterinary medicine, constitute first professional degree programs.

9. Residence. The award of an associate or baccalaureate degree normally entails at least 25 percent of the work being done through the institution awarding the degree. The method and procedures used by the institution in evaluating and granting academic credit for postsecondary degree activity completed elsewhere must be described in writing and disseminated to students and prospective students.

10. Transferability. The institution shall publish its transfer policies and articulation agreements in the institution's catalog. Policies and agreements must define criteria for transferring credit. The institution shall have a defined and published policy for evaluating, awarding and accepting credit for academic instruction, regardless of its mode of delivery.

D. Standard 4 (facilities and library). The institution must have adequate space, equipment, instructional materials, and personnel available to it to provide education of good quality. [G.S. 116-15(f)(4)]

1. Facilities. The institution shall operate and maintain physical facilities, either on or off campus, that are adequate to serve the needs of the institution's educational programs, support services, and mission-related activities. Physical facilities include buildings, classrooms, computers and access to the internet, laboratories, equipment, furniture, grounds, instructional materials, and machinery. Facility sites must be free of traffic hazards and distracting noises.

a. Compliance with safety and health laws. The facilities shall comply with all pertinent ordinances and laws relative to the safety and health of persons on the campus. See also Standard 9.

b. Laboratories and equipment. Laboratories and equipment must be adequate for supporting the particular program of instruction and enhancing student-learning outcomes.

c. Supportive services. Supportive services, faculty and staff offices, and other facilities must be adequate in size and number to accommodate faculty, staff, and students.

d. Housing. Student housing owned, leased, maintained, or approved by the institution must be appropriate, safe, and adequate.

e. Nonownership. If a physical facility is not owned by the institution, evidence through a lease or other means must be submitted that facilities are available for a sufficient duration to demonstrate the stability of the institution and that the institution is capable of completing any program it offers.

2. Library and electronic resources. An adequate library or access to a library and information resources is essential to supporting instruction and enhancing student-learning outcomes.

a. Objectives and policies. The library must have a mission statement and goals to serve as a framework for its activities. The mission and goals are to be compatible and consistent with the institution's mission. The institution shall be able to demonstrate that the library and information resources (or access to library and information resources) fulfill the institution's mission and provide adequate support to academic programs. The library shall engage in a formal planning process that

involves a broad spectrum of the college community and includes the faculty and students. Planning is an iterative process that includes evaluation, updating, and refinement. Evaluation of library resources shall involve all categories of library users. The institution must ensure that users have access to regular and timely instruction in the use of the library and other learning/resources. The institution shall have a librarian. The lines of authority, status, tenure, and major duties of the librarian must be clearly stated as well as the nature of faculty involvement in the determination of library policy and in acquisition procedures. Contractual agreements with other libraries must define the following:

(1) The extent to which the holdings of the other libraries support adequately the institution's educational program and enrollment at the relevant degree level;

(2) The degree to which students of the institution can use these libraries and the nature of the use, including procedures for student and faculty registration for use;

(3) The arrangements with the other libraries for acquisition of materials needed for the institution's educational program which the outside library may not normally acquire;

(4) The degree of authority of the institution's officials in making library policy to support the needs of the institution;

(5) Financial arrangements or fees for the use of other libraries; and

(6) Responsibilities of the college for replacement of materials lost by students of the college. The details of the contractual arrangements with other libraries must meet the criteria outlined in these standards.

b. Staff. The library staff must be of a size and quality adequate to meet the objectives of the library and the academic programs it supports. The library must ordinarily be under the direction and supervision of a professionally trained librarian, who has a graduate library degree from a school of library science that is accredited by the American Library Association. The librarian must perform duties of a professional nature, involving organization of the entire library program, supervision or performance of acquisitions, cataloging, reference, circulation and use functions, and coordination of the library with the academic program of the college. The last involves working with faculty members in the selection and use of materials, and organizing and/or conducting a library orientation and instruction program for students and faculty. Staff of the library must be sufficient to perform all the clerical functions of the library and must have skills and training appropriate for their duties.

c. Administration. The library must be administered in a manner that permits and encourages the most effective use of available library resources. The librarian shall report either to the chief executive officer or the chief academic officer. There must be a standing advisory committee of faculty members representative of the academic programs of the college to advise the librarian at least annually on acquisitions and ways of improving library services as well as to serve as the main channel of formal communications between the library and the user community. The library committee must also evaluate annually the adequacy of the collection and services. The library must keep up-to-date and adequate records of circulation, holdings, inventory data, materials on order, current periodicals received, expenditures, and budgets. The library must encourage the additional use of other library resources that may be available and seek out and help develop cooperative agreements with other libraries. Written contractual agreements must be negotiated with the libraries and these agreements must include the items specified under paragraph IV.D.2.a., above. The institution must assign responsibility for providing

library/learning resources and services and for ensuring continued access to them at each site.

d. Distance education. The institution is responsible for funding and appropriately meeting the information needs of students enrolled in its distance learning courses and programs by supporting teaching, learning, and research. This support must provide ready and equivalent library service and learning resources to all its faculty and students, regardless of location. The institution must own the library/learning resources, provide access to electronic information available through existing technologies, and/or provide them through other libraries. If programs are to depend primarily on other libraries, the collections in those libraries must be adequate to support academic programs and courses at levels relevant to the degree objective.

e. The library collection. The holdings of the library must be appropriate for the purpose, course offerings, degree programs, and enrollment of the institution. College libraries must assure quality and appropriateness of the collection by the use of standard lists of books and periodicals for selection. The number of volumes in the collection, or access to resources, must be appropriate for the academic programs and the enrollment. Procedures must be developed to involve the faculty in selecting materials for the collection. Selection tools such as Choice, Current Reviews for Academic Libraries, Book Publishing Record, Library Journal, and professional library journals must be available for selection of current books and periodicals. There must be a continuing evaluation of the quality of the collection by checking holdings against bibliographies, and basic lists.

f. Organization of collection. Materials must be classified and organized by nationally approved conventions and arranged on the shelves for efficient retrieval. A catalog or catalogs of holdings by author, title, and subject must be available for public use. In addition, requisite subordinate files such as serial checking records and shelf lists must be available.

g. Budget and finance. An annual library-operating budget, which authorizes sufficient financial support, is required to provide, maintain, and insure adequate and suitable library holdings, facilities, and services.

h. Service and use. The library must establish and maintain a range and quality of services that will promote the academic program of the college. In addition to providing basic reference and circulation services, orientation and instruction in the use of libraries must be provided for students and faculty. It is ordinarily desirable to have a written library guide and/or handbook for students and faculty members. When appropriate, teaching faculty should require the use of library materials in instructional programs, such as supplementary readings and research papers. If the institution maintains a physical library, the library must be open to student access for a reasonable number of hours when classes are not scheduled, both during the normal study week and during weekends and vacation periods. Library materials must be circulated to students, faculty members, and other qualified users under equitable policies. The quality of the collections available locally to patrons should ordinarily be enhanced by an interlibrary loan service in accordance with the American Library Association (ALA) Interlibrary Loan Code and local, regional, or state interlibrary cooperative agreements.

i. Library facilities. If the institution maintains a physical library, then the space assigned for library usage must be conducive to study. A central and single location is desirable. The library must have good lighting, adequate ventilation, and proper temperature and humidity control. The size or square footage shall be appropriate for the student body, number of volumes in the collection, and the type of instructional program emphasized by the college. Seating must be provided for at least 10 percent of the largest number of students on campus at any time. Space

allocated for book and periodical shelving must be sufficient for normal growth, as well as for the current collection. In addition, adequate space must be provided for staff, library services, and other instructional materials, which may require special facilities for safekeeping.

j. Equipment. If the institution maintains a physical library, furniture, computers, copy machines, audiovisual, digital and general equipment must be operational and in an adequate state of repair.

E. Standard 5 (Faculty and Other Personnel Qualifications). The education, experience, and other qualifications of directors, administrators, supervisors, and instructors must be such as may reasonably ensure that the students will receive, or will be reliably certified to have received, education of good quality consistent with the stated objectives of any course or program of study, equivalent experience, or achievement test offered by the institution. [G.S. 116-15(f)(5)]

1. Faculty. The institution must employ competent faculty members to accomplish the mission and goals of the institution and must give them the central role in curriculum development and delivery. When determining acceptable qualifications of its faculty, an institution must give primary consideration to the highest earned degree in the discipline in accord with the guidelines listed below. The institution shall also consider competence, effectiveness, and capacity, including, as appropriate, undergraduate and graduate degrees, related work experiences in the field, professional licensure and certifications, honors and awards, continuous documented excellence in teaching, or other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. The institution is responsible for justifying and documenting the qualifications of its entire faculty, regardless of method of delivery or location. Electronically delivered courses must provide for meaningful and continuing interaction between faculty and among students.

2. Educational credentials.

a. Faculty teaching in programs leading to an associate's degree and non-degree programs offering credit towards a degree. Faculty teaching in an associate degree program or a non-degree program offering credit towards a degree must hold at least a master's degree or the equivalent in the field of specialization in which they are teaching. Exceptions must be justified by special competence in their field of knowledge. A minimum of 18 graduate semester hours in the master's degree must be in the discipline in which they are teaching, from a regionally accredited institution of higher education. Teaching disciplines are those considered appropriate for faculty teaching a subject area by discipline experts.

b. Faculty teaching in a bachelor's degree program. Faculty teaching in an institution offering a baccalaureate degree must hold at least a master's degree or equivalent in the field of specialization in which they are teaching. A majority of the faculty must have satisfactorily completed work beyond the master's degree in an accredited graduate school, and at least 25 percent of the course hours in each major must be taught by faculty who hold the doctorate or other terminal degree in the field of specialization from a regionally accredited institution of higher education.

c. Faculty teaching in programs granting graduate degrees. Faculty teaching in programs granting graduate degrees must hold the doctorate or other terminal degree in the teaching discipline or related field.

d. Faculty teaching in first professional degree programs. Faculty teaching in first professional degree programs must meet recognized standards in their fields.

e. Graduate teaching assistants. For baccalaureate instruction, graduate teaching assistants (applicable to graduate degree or professional degree granting institutions) must hold a masters in the teaching field or 18 graduate semester hours in the teaching discipline. Graduate assistants must be directly supervised by a

faculty member experienced in the teaching discipline with regular in-service training and planned and periodic evaluations.

f. Size. The faculty must be sufficient in number, and the proportion of part-time members and the student-teacher ratio must be such as to assure the effectiveness of the educational program, including counseling and advising of students. The faculty must be representative of the principal areas of instruction offered by the institution and have a composition relevant to the number and nature of the courses taught. Further, the faculty should consist of full-time, paid appointments sufficient to insure continuity and stability of the educational programs and to provide adequate educational association between students and faculty. In no instance may the faculty number fewer than four full-time, paid members.

g. Definition of responsibilities. Faculty responsibilities must be defined in writing in terms of hours taught, course development and research required, number of students, level of instruction, research expected, administrative duties, student advising, committee assignments, counseling assignments, and other expectations.

h. Faculty development. The institution must provide evidence of ongoing professional development of faculty. Faculty individually must engage in continuing professional study or research appropriate to their responsibilities. Provisions must be made for attendance at professional meetings and periodic study leaves to encourage continued competence, effectiveness, and productivity. Faculty teaching via an electronic system must be provided appropriate training, support services, equipment, software and communications for interaction with students, faculty, and other institutional personnel.

i. Appointment. Faculty must be appointed by official action of the governing board of the institution upon recommendation by its chief executive officer. Notice of appointment must be in writing and must contain the conditions of employment and personnel policies with regard to academic freedom and economic security.

j. Evaluation of faculty. The institution must evaluate annually the effectiveness of each faculty member in accord with published criteria, regardless of contractual or tenured status. These data must be available and used for faculty development and appointment decisions.

k. Academic freedom. The institution must publish policies on academic freedom in a manner accessible to students, prospective students, and the public.

l. Faculty involvement in decision-making. The institution must publish policies, in a manner accessible to students, prospective students, and the public, clearly defining the role of the faculty in decision making in the hiring of other faculty, curriculum development, evaluation of faculty, and the hiring and evaluation of administrative staff.

m. Stability. The faculty conducting classes in upper-division courses must be stable. The institution must provide a roster evidencing such stability in its initial application and in each annual report. The institution must induce such stability with adequate salaries, fringe benefits, desirable working conditions, and tenure status as appropriate.

3. Administration. The chief executive and administrative officers should ordinarily hold at least a master's degree. The chief academic officer and academic officers (e.g., deans, department chairpersons) should ordinarily also hold a minimum of a master's degree. Exceptions should be justified by special competence or experience in their areas of responsibility and must be documented in personnel files. For baccalaureate or higher-

degree granting institutions, a terminal degree will ordinarily be required for academic officers.

F. Standard 6 (Catalog). The institution must provide students and other interested persons with a catalog or brochure containing information describing the substance, objectives, and duration of the study, equivalent experience, and achievement testing offered; a schedule of related tuition, fees, and all other necessary charges and expenses; cancellation and refund policies; and such other material facts concerning the institution and the program or course of study, equivalent experience, and achievement testing as are reasonably likely to affect the decision of the student to enroll therein, together with any other disclosures that may be specified by the Board. Such information is provided to prospective students prior to enrollment. [G.S. 116-15(f)(6)] The catalog shall also include a description of the faculty and their qualifications, a description of students' rights, admission policies, transferability, articulation agreements, student code of conduct, and other relevant institutional policies. The catalog must clearly indicate the specific beginning and ending dates defining the time period covered by the catalog. The institution shall provide a statement in its catalog of the transferability of its courses and degrees to other academic institutions that are regionally accredited. The institution shall update its catalog at least biennially. That catalog may be in electronic or hard copy form. The catalog, or if the catalog is electronic, notification of where it may be accessed online, must be provided to students and prospective students prior to enrollment. "Prior to enrollment" as used herein shall mean at least five days prior to the institution receiving any money from the student or prospective student that is not fully refundable. The catalog must contain statements with respect to the following: the mission of the institution, ownership and control of the institution, name, title, and office location of officer responsible for receiving students who wish to file complaints and to seek redress, contact information for North Carolina Postsecondary Education Complaints, location and accessibility of Guaranty Bond (for prepaid tuition held) for review by anyone wishing to see it, location, telephone number, electronic mail and web address of the principal office of the corporation directly owning the institution and of the institution offering the degrees, availability of health care services and degree of responsibility of the institution for providing such services, the institution's cancellation and refund policy, and a full description of job placement assistance provided to students and former students. In the case of courses delivered electronically, catalogs or brochures must provide students with clear and complete information on the nature of faculty/student interaction, prerequisite technology competencies and skills, technical equipment requirements, and availability of academic support services.

G. Standard 7 (Program Completion Credentials). Upon satisfactory completion of study, equivalent experience, or achievement test, the student must be given appropriate educational credentials by the institution, indicating that the relevant study, equivalent experience, or achievement testing has been satisfactorily completed by the student. [G.S. 116-15(f)(7)]. The institution must employ sound and acceptable practices for determining the amount and level of credit awarded for courses, regardless of format or mode of delivery. The institution must have a defined and published policy for evaluating, awarding and accepting credit for transfer, experiential learning, advanced placement, and equivalent experiences that is consistent with its mission and ensures that course work and learning outcomes are at the appropriate postsecondary level. The institution assumes responsibility for the academic quality of any course work or credit recorded on the institution's transcript.

H. Standard 8 (Student Records). The institution must maintain records that are adequate to reflect the application of relevant performance or grading standards to each enrolled student. [G.S. 116-15(f)(8)] The institution must protect the security, confidentiality, and integrity of its student records. The institution shall maintain student records for each student, whether or not the student completes the educational program.

1. Content of records. Records must show attendance, progress, and grades of each enrolled student.

2. Purpose of records. Adequate student records must be maintained by the institution to substantiate student attendance, academic progress, grades earned, and to provide evidence that satisfactory standards are enforced relative to attendance, progress, and performance.

3. Disposition of records. The institution must ensure that student records are provided to the North Carolina State Archives in the event that the institution discontinues operations. In the case of an institution having more than one campus, the institution shall transfer a copy of closing campus's student records, including without limitation each student's transcript, regardless of whether the entire institution is closing. Records must be transmitted in a form acceptable to the North Carolina State Archives.

I. Standard 8B (Student Services). The institution must provide adequate services for students in addition to formal instructional experiences of the classroom and laboratory. These services normally include admissions, orientation, counseling and guidance, academic advising, financial assistance, health care, job placement, student records, and extracurricular activities. Student services must support the institution's mission, and must be evaluated annually. Sufficient qualified personnel must be employed to ensure the quality and effectiveness of all services for students.

Consistent with its mission, the institution must provide student support programs, services, and activities that promote student learning and enhance the development of its students.

1. Admissions. The institution must have a clearly stated admissions policy. High school graduation or an equivalent credential should ordinarily be required to matriculate. A bachelor's degree or demonstrable equivalent must be required for admission into graduate or professional degree programs. Admission is determined by the readiness and ability of a student to gain knowledge from the instructional offerings.

2. Counseling and guidance. Appropriate counseling and guidance services must be available to students. An advisor must be assigned to assist each student in program planning, course selection, and other academic matters. Special care must be exercised to maintain and protect confidentiality of counseling records.

3. Health care services. Suitable health care services must be readily available in or near the institution. The character of these services and degree of institutional responsibility must be stated in the catalog and other appropriate literature.

4. Outcome data. Institutions shall provide graduation and retention data to students, prospective students, and the UNC System upon request, along with the methodology used to calculate that graduation and retention data. If the institution calculates job placement data for any purpose, that data must be provided to students, prospective students, and the UNC System upon request. Institutions must maintain records sufficient to verify graduation, retention, and job placement data which is reported to students, prospective students, and the UNC System on a student-by-student basis.

J. Standard 9 (Compliance with Ordinances and Laws). The institution must be maintained and operated in compliance with all pertinent ordinances and laws, including rules and regulations adopted pursuant thereto, relative to the safety and health of all persons upon the premises of the institution. [G.S. 116-15(f)(9)]

K. Standard 10 (Finance and Organization). The institution must be financially sound and capable of fulfilling its commitments to students. [G.S. 116-15(f)(10)]

1. Finances. The institution must possess and maintain adequate financial resources to sustain its mission and purpose.

a. Stability. Financial resources should be characterized by stability that indicates the institution is capable of maintaining operational continuity for an extended period of time. The minimum "extended period of time" is one and one-half times the duration of the most lengthy postsecondary degree program offered.

b. Adequacy. Average annual expenditures per student for educational programs; average annual income per student from educational activities; the ratio

of net profit, adjusted, to debt service costs (normally, the formula components are annual net profit plus interest on debt plus expenses not requiring an outlay of funds, such as depreciation, divided by debt service costs, consisting primarily of payments on principal and interest); and all financial policies, procedures, and practices must be in keeping with industry standards and reasonably likely to produce an education of good quality for students.

c. Plan for financial development. A coordinated, comprehensive, flexible financial plan (budget) for long-range management of the institution must be maintained.

d. Financial records and audit report. The institution's recent financial history must demonstrate financial stability. The institution shall present documents consistent with generally accepted accounting standards reflecting its financial condition during the application process and yearly, thereafter, in the reporting process. The institution must maintain adequate and sufficient financial records, and its financial statements must be audited annually by an independent certified public accountant (CPA) according to generally accepted auditing standards. The independent certified public accountant must render an unqualified opinion as to the fairness of presentation of financial statements and as to their conformity with generally accepted accounting principles.

e. Insurance. Adequate casualty and liability insurance must be maintained to protect the institution's financial interests.

f. Bonding. A tuition guaranty bond, or equivalent, of not less than $10,000 and at least equal to or higher than the maximum amount of prepaid tuition held (i.e., unearned tuition held) existing at any time during the most recent fiscal year must be maintained. The bond must secure the institution's compliance with G.S. 116-15 and Section 400.1 of the UNC Policy Manual. The bond must continue in effect until cancelled by the institution, and it must recite that such cancellation may not be effective prior to 30 days' notice of cancellation to the Board. The institution must provide a statement by an independent certified public accountant specifying the existing principal amount of tuition guaranty bond and that the principal amount is not less than $10,000 and is at least equal to or higher than the maximum amount of prepaid tuition held (i.e., unearned tuition held) existing at any time during the most recent fiscal year. Such statement should be expressed as follows: "The guaranty tuition bond in the amount of _____ (amount) maintained by _____(name) College as of the date of this statement is not less than $10,000 and is at least equal to or higher than the maximum amount of prepaid tuition held (i.e. unearned tuition held) existing at any time during the fiscal year ended _____." The UNC System shall promulgate regulations relating to the proper calculation of the bond.

2. Organization. The institution must be organized to provide efficient and effective administrative, program, and resource support for the attainment of its mission and purpose. The institution should demonstrate that there is an ongoing planning and evaluation process that guides its decision-making and actions. The institution shall demonstrate that it engages in continuous planning, evaluation, and improvement. The institution must be able to demonstrate that it accomplishes its mission by presenting student data, faculty data, employment data, and other evaluative data consistent with an appropriate standard.

a. Mission statement. Institutions must have a mission statement. This statement, comprising the philosophy and objectives of the institution, should include definitions of the educational climate to be maintained, the character of education that students are expected to possess upon graduation, the occupational and other outcomes expected from available programs, and characteristics of attained individual growth. The statement should be operationally effective and should be periodically reviewed for possible improvement and restatement. An

interval of five years is suggested as a maximum period between reviews. The statement should describe both the concept and practice of the institution. The institution must be prepared to present evidence that the various elements of its operation (e.g., faculty work, educational program, student life, finances, physical facilities, organization, and administration) are designed to support the stated mission. The mission statement must be published in a manner accessible to students, prospective students, and the public.

b. Governance. The institution should operate under control of a governing board. The board should be responsible for formulation of institutional policy, including policies concerning related and affiliated corporate entities and all auxiliary service(s), selection and evaluation of a chief executive officer, appointment of subordinate staff and professional personnel, fiscal stability of the institution, the institutional mission, development and maintenance of bylaws consistent with the institution's mission and specifying the number, manner of appointment, and terms of officers and members of the board; frequency of minimum meetings per annum; format of official minutes of board meetings; and all matters related to duties, responsibilities, and procedures of the governing board and its members. If the governing board delegates any of its policymaking or other powers, duties, or responsibilities to other parties, such delegations must be approved by a majority of the membership of the board, be in writing, be recorded in the minutes, and not compromise the institution's present or future financial stability and/or capability of fulfilling commitments to students.

c. Management. The institution shall have a governing board with specific policy-making authority over the institution. There must be a clear and appropriate distinction, in writing and practice, between the policy-making functions of the governing board and the responsibility of the administration and faculty to administer and implement policy. The institution shall have a chief executive officer whose primary responsibility is to the institution and who is not the presiding officer of the board. The governing board shall have a policy and a process to monitor conflicts of interest. Business and financial management must be centralized and administered in a qualified and bonded business office responsible to the chief executive officer charged with supervision of the budget.

d. Administration. Administrative responsibilities and concomitant authority must be clearly stated in writing. Organizational charts showing lines of authority and relationships among component units, positions, and personnel must be communicated and continuously updated. The role of each group comprising an institution (i.e., governing board, administrators, faculty, students) and the nature and extent of the involvement of each group in resolution of issues and determination of the policies must be available in writing for distribution to all constituent groups. The institution must substantively follow all of its internal policies and procedures.

L. Standard 11 (Business Practices). The institution, through itself or those with whom it may contract, must not engage in promotion, sales, collection, credit, or other practices of any type which are false, deceptive, misleading, or unfair. [G.S. 116-15(f)(11)]

M. Standard 12 (Professional Conduct). The chief executive officer, trustees, directors, owners, administrators, supervisors, staff, instructors, and employees of the institution must not have a record of unprofessional conduct or incompetence that would reasonably call into question the overall quality of the institution. [G.S.116-15(f)(12)]

N. Standard 13 (Student Housing). Any student housing owned and maintained or approved by the institution, if any, must be appropriate, safe, and adequate. [G.S. 116-15(f)(13)] All federal, state, and local laws and regulations must be complied with respect to the safety and health of occupants and visitors to student housing.

O. Standard 14 (Cancellation and Refund Policy). The institution must have a fair and equitable cancellation and refund policy. [G.S. 116-15(f)(14)] The institution must have and maintain a fair and equitable cancellation and refund policy which applies equally to all students. Such policy must be published in a manner accessible to students, prospective students, and the public.

P. Standard 15 (Institutional Agent). No person or agency with whom the institution contracts may have a record of unprofessional conduct, or incompetence that would reasonably call into question the overall quality of the institution. [G.S. 116-15(f)(15)] Appropriate information must be readily available for review concerning any person or agency with whom the institution contracts for academic or support services.

V. License and Interim Permit. To be issued a license, the institution shall satisfy the Board that standards enumerated in section IV., above, are met. An institution which meets standards for licensure except for having conducted postsecondary degree activity for at least two years immediately prior to submitting an application for licensure may be granted an interim permit to conduct postsecondary degree activity if the institution can demonstrate a quality of stability, experience, reputation, and performance which two years of operation would normally denote. Before the end of the period of the interim permit, the institution will be re-evaluated to determine if it qualifies for a license. Procedural regulations regarding licenses and interim permits, including without limitation rules regarding reviewing, revoking, suspending, and modifying licenses and interim permits, shall be promulgated by the UNC System. These procedural regulations may include regulations allowing the president or the president's designee to grant licenses to be later ratified by the Board. Unless issued a license or interim permit, or declared exempt from licensure, postsecondary degree activity may not be undertaken in North Carolina by nonpublic institutions.

VI. Enforcement. The UNC System shall call to the attention of the Attorney General, for such action as the Attorney General may deem appropriate, any institution failing to comply with these requirements for licensure.

VII. Licensure Fees. All institutions applying for or receiving licensure to conduct educational activities in North Carolina must pay licensing fees and annual fees as set by the UNC System.

VIII. Other Matters

A. Effective Date. The requirements of this policy shall be effective on the date of adoption of this policy by the Board of Governors.

B. Relation to Federal and State Laws. The foregoing policy as adopted by the Board of Governors is meant to supplement, and does not purport to supplant or modify, those statutory enactments which may govern or relate to the subject matter of this policy.

C. Regulations and Guidelines. This policy shall be implemented and applied in accordance with such regulations and guidelines as may be adopted from time to time by the president.

400.4.2
Adopted 09/14/01
Repealed / /18

Establishing Fees for Licensing Nonpublic Institutions to Conduct Postsecondary Degree Activity[1]

The Board of Governors authorizes the President to charge a fee to license nonpublic institutions to conduct postsecondary degree activity in North Carolina. A reasonable fee shall periodically be set by the Board, on recommendation of the president, for initial licensure and for the addition of degrees for previously licensed institutions. This policy is effective June 1, 2001.

[1]This policy implements a Board resolution adopted June 8, 2001.

400.4.~~1.1~~2
Adopted 08/11/95
Amended 09/12/97
Amended / /18

Policy of the Board of Governors of the University of North Carolina with Respect to Exemption from Licensure under N.C. Gen. Stat. § 116-15 of Religious Education

I. Purpose. The purpose of this policy is to implement N.C. Gen. Stat. § 116-15(d) (hereinafter G.S.).

~~1~~II. Delegation. It shall be the responsibility of the president to apply the provisions of G.S. 116-15 and relevant policies and procedures of the Board of Governors, including these policies, to any application for exemption pursuant to G.S. 116-15(d) from licensure to undertake postsecondary degree activity with reference to religious education and in each case to determine the propriety of such exemption, and to assess reasonable fees for evaluating initial applications and conducting subsequent reviews regarding such exemption.

~~2~~III. Definitions

A. The definitions set forth in G.S. 116-15(a2) are hereby incorporated by reference into these policies.

~~A.~~B. "Program of study" means each academic program offered by an institution and includes without limitation all majors, minors, concentrations, and degrees.

~~3~~IV. Standards for Exemption. Exemption from licensure with respect to religious education under G.S. 116-15(d) shall rest upon one of the following:

~~a.~~A. That the subject education constitutes postsecondary degree activity based upon a program of study, equivalent experience, or achievement testing the institutionally planned objective of which is the attainment of a degree in theology, divinity, or religious education; or

~~b.~~B. That the subject education constitutes a program of study, equivalent experience, or achievement testing, other than that identified in paragraph A.~~a~~, above, that is designed by the offering institution primarily for career preparation in a religious vocation.

~~4~~V. Extent of exemption. An institution shall be conferred exemption from licensure only with respect to each program of study, equivalent experience, or achievement test that the institution demonstrates to the satisfaction of the president comes within one of the standards for exemption set forth in section IV.~~3~~, above.

~~5~~VI. Determination of ~~e~~Eligibility for E~~e~~xemption. The president shall determine whether to confer exemption with respect to religious education as provided in G.S. 116-15 only upon the president's receipt from staff of a recommendation concerning exemption based upon the following:

A~~a~~. Staff summary of a site visit to the petitioning institution~~. [(i~~f appropriate~~)~~.

~~b.~~B. Documents and information relevant to the qualifying nature of the petitioning institution and the subject curriculum, which shall include:

1. If the institution is a business entity, the ~~A~~articles of incorporation or articles of organization of the institution, including all current amendments thereto.

2. The title of each degree program for which exemption is sought.

3. The educational credential proposed to be given by the institution upon satisfactory completion of each program of study, equivalent experience, or achievement test for which exemption is sought.

4. The catalog statement and any other institutional statement (such as curriculum outline) for each program of study, equivalent experience, or achievement test for which exemption is sought.

5. Those other documents that the president may determine are necessary to establish that the institution conforms to the standards for exemption set out in ~~paragraph~~section -IV., above.

~~c~~C. Assurances from the petitioning institution that it has conformed, or will conform, institutional literature and educational credentials to the conditions of licensure exemption pursuant to these policies, which shall include:

1. Designating any degree program of study or academic credential for which exemption from licensure is to pertain by a title that clearly indicates its religious nature so that the institutional objective of the program for its use in attainment of a degree in theology, divinity, or religious education, or its institutional design primarily for career preparation in a religious vocation is apparent.

2. Prominently displaying in relevant institutional publications a statement that the relevant degree program of study has been declared by the appropriate state authority exempt from the requirements for licensure, under provisions of ~~North Carolina General Statutes Section (~~G.S.~~)~~ 116-15(d), for exemption from licensure with respect to religious education.

3. Prominently displaying in relevant institutional publications a statement that Exemption from licensure is not based upon assessment of program quality under established licensing standards.

~~6~~VII. Duration of ~~c~~Exemption. At least annually, ~~S~~staff shall make ~~annual~~ inquiry of institutions conferred exemption with respect to religious education to ascertain the continuation of those bases upon which there was conferred exemption from licensure. An exemption shall continue unless suspended or revoked by the president following the president's consideration of a corresponding recommendation from staff. An exemption shall also end when the institution ceases to have students enrolled in the exempt program, except that in such case staff may continue the exemption for a reasonable period for good cause shown.

~~7~~VIII. Pursuit of ~~l~~Licensure. An institution shall seek licensure to conduct ~~post-secondary~~postsecondary activity with respect to any program of study, equivalent experience, or achievement test for which exemption from licensure has been denied for failure of the institution to satisfy these policies but which postsecondary ~~activity~~ the institution ~~continues to offer or~~ intends ~~imminently t~~to offer.

~~8.~~IX. Violation of ~~c~~Conditions. If the president determines that an institution (1) has failed to seek and obtain licensure or exemption from licensure, as required by these policies; or (2) has failed to fulfill any obligation attendant to exemption from licensure under these policies, the president may suspend or revoke the exemption and shall request that the Attorney General of North Carolina take appropriate action against the offending institution.

~~9. Effective date. These policies, as amended, are effective September 12, 1997.~~

X. Other Matters

A. Effective Date. The requirements of this policy shall be effective on the date of adoption of this policy by the Board of Governors.

B. Relation to Federal and State Laws. The foregoing policy as adopted by the Board of Governors is meant to supplement, and does not purport to supplant or modify, those statutory enactments which may govern or relate to the subject matter of this policy.

C. Regulations and Guidelines. This policy shall be implemented and applied in accordance with such regulations and guidelines as may be adopted from time to time by the president.

400.4.1[G]
Adopted 2/07/11
Repealed / /18

Guidelines for the Rules and Standards for Licensure

The following guidelines for the University of North Carolina Board of Governors *Rules and Standards for Licensing Nonpublic Institutions to Conduct Post-Secondary Degree Activity in North Carolina (December 2004)* are to assist institutions in the preparation of applications for licensure and Annual Reports.

A. The following additional information and data shall be included in all licensure applications under the specified Standard section headings:

Standard 3.A. Courses: Student retention rates and graduation rates, by degree program, for the most recent three-year period, reported by year. The institution shall state how these rates are calculated, and specify the twelve-month period that defines the institution's "year."

Standard 3.B. Distance Education: For courses delivered electronically, a brief description of the learning management system

Standard 8.B. Purpose of Records: A description of how the institution defines and measures "satisfactory academic progress" for students, and how the institution enforces and utilizes its Satisfactory Academic Progress policy

Standard 8B.D. Job Placement Assistance and Standard 10.B. Organization: Graduating student employment rates, by degree program, for the most recent three-year period, reported by year. The institution shall state how these rates are calculated, and specify the twelve-month period that defines the institution's "year."

Standard 10.A.(2) Adequacy: Respond individually to each of the four items specified in this Standard:

a. Average annual expenditures per student for educational programs (and explain how that number was calculated)

b. Average annual income per student from educational activities (and explain how that number was calculated)

c. The ratio of net profit, adjusted, to debt service costs (as defined in Standard 10.A.(2).(c))

d. Financial policies, procedures, and practices adopted or utilized by the institution

Standard 10.A.(6)(a). Bonding: Currently licensed institutions shall provide a statement by an independent certified public accountant attesting to the adequacy of the tuition guaranty bond (a copy of which shall be sent with the licensure application), when the institutions are seeking licensure for new degree programs or for the periodic review site visits.

Standard 10.B. Organization: The institution shall demonstrate that it engages in continuous planning, evaluation, and improvement. Specifically, the institution shall provide information on its plans and processes for continuing to improve its student retention, graduation, and employment rates. If the institution has an Institutional Effectiveness Plan (or similar document) it should be attached. The institution shall provide evidence of institutional changes made based upon assessment of institutional effectiveness.

Standard 11 Business Practices and Standard 12 Professional Conduct: The institution shall provide information on any current or pending litigation or regulatory matters that relate to the institution or to a controlling or related entity or individual.

B. The following additional information and data shall be included in all Annual Reports under the specified Standard section headings:

Standard 3.A. Courses: Student retention rates and graduation rates, by degree program, for the most recent three-year period, reported by year. The institution shall state how these rates are calculated, and specify the twelve-month period that defines the institution's "year."

Standard 8B.D. Job Placement Assistance and Standard 10.B. Organization: Graduating student employment rates, by degree program, for the most recent three-year period, reported by year. The institution shall state how these rates are calculated, and specify the twelve-month period that defines the institution's "year."

Standard 10.A.(6)(a). Bonding: Institutions shall provide a statement by an independent certified public accountant attesting to the adequacy of the tuition guaranty bond (a copy of which shall be sent with the Annual Report).

Standard 10.B. Organization: The institution shall demonstrate that it engages in continuous planning, evaluation, and improvement. Specifically, the institution shall provide information on its plans and processes for continuing to improve its student retention, graduation, and employment rates. If the institution has an Institutional Effectiveness Plan (or similar document) it should be attached. The institution shall provide evidence of institutional changes made based upon assessment of institutional effectiveness.

Standard 11 Business Practices and Standard 12 Professional Conduct: The institution shall provide information on any current or pending litigation or regulatory matters that relate to the institution or to a controlling or related entity or individual.

400.4.1.1[R]
Adopted 03/23/05
Amended / /18

Regulation Governing Review of Licensure for Nonpublic, Postsecondary Institutions Proposing to Open Additional Campuses or Sites in North Carolina to Offer Degree Programs that have been Previously Licensed by the Board of Governors

I. Purpose.

This regulation applies to institutions with programs licensed pursuant to ChapterSection 400.4.1 of thisthe UNC Policy Manual, which open or intend to open additional sites or campuses in North Carolina after having been previously licensed to conduct postsecondary degree granting activity by the BOGBoard of Governors.

An institution proposing to open an additional campus or site in North Carolina to offer degree programs that have been previously licensed by the Board of Governors should send a letter of intent to the Office of the President indicating the degree programs it proposes to offer and the city and proposed location for offering them.

II. Application Required

A. The institution shall provide an application for the proposed campus or site documenting that the institution is in compliance with, or intends to be in compliance with,will be in compliance with the *Rules and Standards* Section 400.4.1 of the UNC Policy Manual at the proposed new campus or site. . This application should be presented at least six month prior to the date the institution proposes to open a campus or site in a new city or locality.Staff from the UNC System shall direct the form and content of the application based upon the initial notification received from the institution and may require a site visit to the proposed new campus or site.

B. The Staff Office of the President will review the application for the proposed campus or site.

C. If appropriate, the Office of the President staff from the UNC System will respond in writing that the institution may proceed with its plans to open the new campus or site to offer the proposed postsecondary degree programs that have been previously approved by the Board of Governors. The Office of the President UNC System requires a site visit, within a calendar year of the date of the letter of approval, by a team of examiners with expertise in the field to ascertain the institution's compliance with the *Rules and Standards* Section 400.4.1 of the UNC Policy Manual at the new campus or site.

D. A report of the site visit by the team of examiners will be forwarded to the Office of the President UNC System for review and recommendation to the president.

E. The institution must comply with the *Rules and Standards*Section 400.4.1 of the UNC Policy Manual to maintain its license to offer the degrees at the additional site.

III. Other Matters

A. Effective Date. The requirements of this regulation shall be effective on the date of adoption of this regulation by the president.

B. Relation to Federal and State Laws and Policies. The foregoing regulation is meant to supplement, and does not purport to supplant or modify, those statutory enactments, regulations, and policies which may govern or relate to the subject matter of this regulation.

400.4.1.2[R]
Adopted __/__/18

Regulation Governing Review of Changes in Ownership and Legal Reconstitutions of Out-of-State and Nonpublic Institutions

I. Purpose. Pursuant to N.C. Gen. Stat. § 116-15(g) (hereinafter G.S.), and Section 400.4.3[R], VI.B., subsections 3., and 4., of the UNC Policy Manual, staff will review the license of an institution when the institution is legally reconstituted and when a preponderance of all of the assets of the institution changes pursuant to a single transaction or a recognizable sequence of transactions or agreements.

II. Definitions

A. "Change in ownership," as used herein, means a change in the ownership of a preponderance of an institution's or corporate parent's assets pursuant to a single transaction or a recognizable sequence of transactions or agreements. Change of ownership does not include:

1. A transfer of the entire portion of a natural person's ownership interest to that person's parent, stepparent, sibling, stepsibling, spouse, child or stepchild, grandchild or step-grandchild; spouse's parent or stepparent, spouse's sibling or stepsibling, spouse's child or stepchild, spouse's grandchild or stepgrandchild; child's spouse, and sibling's spouse; or

2. A transfer of the entire portion of a natural person's ownership interest, upon the retirement or death of that person, to a natural person with a pre-existing ownership interest in the school who has been involved in management of the school for at least two years preceding the transfer, and who has established and retained the pre-existing ownership interest for at least two years prior to the transfer.

B. "Legal reconstitution" means a change in the corporate form of the institution or its corporate parent, including a change from a for-profit to a nonprofit corporation or from a nonprofit to a for-profit corporation.

C. "Preponderance of the Assets" means:

1. Greater than 50 percent of the ownership interest of an institution or its corporate parent; or

2. Assets worth greater than 50 percent of the institution's or corporate parent's fair market value.

III. Staff Response. Upon notification from the institution, staff will timely respond with initial inquiries to determine the size and scope of the required review. Staff will consider, among other factors, the proposed purchaser's projected changes to the institution in determining the review's size and scope. Upon completion of the review of licensure, staff will notify the parties to the transaction.

IV. Relationship of Change in Ownership reviews to Applications for New Licensure. A change in ownership which results in an already authorized institution becoming a branch campus of an unauthorized institution ordinarily requires the unauthorized institution to become authorized to conduct postsecondary degree granting activity in North Carolina. As long as the new branch campus remains otherwise authorized, it may continue to conduct postsecondary degree granting activity pending adjudication of the unauthorized parent institution's application to become authorized. Staff determines whether the change in ownership will cause an already authorized institution will become a branch campus of an unauthorized institution. In making that determination, staff may consider whether the authorized institution will be considered a branch campus for accreditation or for Federal Student Aid purposes. A review of licensure because of a change in ownership ordinarily focuses on the immediate effects of the change in ownership on North Carolina students. The unauthorized parent institution's application to become authorized is

based upon the standards found in G.S. § 116-15. Notification from staff that a change in ownership licensure review is complete does not imply that the unauthorized parent institution's application to be authorized to conduct postsecondary degree activity in North Carolina will be granted.

V. Other Matters

A. Effective Date. The requirements of this regulation shall be effective on the date of adoption of this regulation by the president.

B. Relation to Federal and State Laws and Policies. The foregoing regulation is meant to supplement, and does not purport to supplant or modify, those statutory enactments, regulations, and policies which may govern or relate to the subject matter of this regulation.

400.4.1.3[R]
Adopted __/__/18

Regulation on Procedures for Licensure

I. Purpose. The purpose of this regulation is to set forth the procedures the UNC System will implement regarding the application for licensure, review of licensure, and modification and revocation of licensure of institutions conducting postsecondary degree activity in North Carolina pursuant on N.C. Gen. Stat. § 116-15 (hereinafter G.S.).

II. Definitions. This regulation incorporates those definitions found in G.S. 116-15 and in Section 400.4.1 of the UNC Policy Manual.

III. General Provisions

A. Except as provided in subsection (b) of this section, before a private institution or its agent undertakes postsecondary degree activity in North Carolina, the institution or its agent must be licensed in accordance with this policy or declared exempt from licensure in accordance with G.S. 116-15(c), (d), or (e).

B. An institution may advertise postsecondary degree activity that is not yet licensed if all of the following conditions are met:

1. An application for licensure made in accordance with this regulation for the postsecondary degree activity has been received by the UNC System, and the UNC System has acknowledged receipt of that application.

2. The advertisement contains a disclaimer stating that the institution has an application for licensure of the postsecondary degree activity pending before the University of North Carolina Board of Governors and that licensure is required prior to the start date of the postsecondary degree activity.

3. Such other conditions as the UNC System may for good cause require, including the prohibition of advertising prior to licensure.

Except as provided herein, an institution may not advertise postsecondary degree activity that is not licensed or declared exempt from licensure.

C. An institution may not receive funds that are not fully refundable from students or prospective students for enrollment in an unlicensed postsecondary degree activity. If the postsecondary degree activity is not licensed by the projected start date, funds received from students or prospective students for enrollment in the postsecondary degree activity must be refunded within ten business days of the projected start date. If the institution withdraws its application for licensure, funds received from students or prospective students for enrollment in the postsecondary degree activity must be refunded within ten business days of that withdrawal.

D. Licensure authorizes an institution to conduct postsecondary degree activity only as specified by the Board of Governors.

IV. Interim Permit. An institution wishing to conduct one or more postsecondary degree activities in North Carolina which meet the standards for licensure set out in Section 400.4.1 of the UNC Policy Manual (except for the requirement regarding the length of time the institution has been in operation), may be granted an interim permit to conduct the postsecondary degree activity if the institution can demonstrate a quality of stability, experience, reputation, and performance which two years of operation would normally denote. An interim permit expires two years after it is issued by the Board. Before expiration of the interim permit, the postsecondary degree activity will be re-evaluated to determine if it qualifies for a license. An interim permit may be issued contingent upon those conditions that the Board imposes. Except as set forth

in this subsection, the procedures for issuing, modifying, and revoking an interim permit are the same as those set out in section V., below, of this regulation.

V. Procedures for Licensure. Institutions applying for licensure to conduct a postsecondary degree activity or activities shall follow the following steps:

A. Preliminary Conference. The institution seeking licensure shall contact the UNC System and arrange for a preliminary conference to discuss the standards and procedures for applying for licensure. The preliminary conference shall occur in a time, place, and manner prescribed by the University of North Carolina System.

B. Application for Licensure. Following the preliminary conference, the institution shall submit a formal application that demonstrates the proposed postsecondary degree activity will be in compliance with each standard enumerated in G.S. 116-15(f) and Section 400.4.1. The application must also contain a letter stating the intent of the institution to apply for licensure. This letter must describe the mission of the institution, the proposed postsecondary degree activity submitted for approval, and projected enrollment. The application shall be made in the manner prescribed by the UNC System. Fees for applications will be set by the UNC System.

C. Site Visit

1. If the application indicates that the proposed postsecondary activity is reasonably likely to meet the standards enumerated in G.S. 116-15(f) and Section 400.4.1 of the UNC Policy Manual, and if appropriate in accordance with this subsection, the UNC System may arrange with the institution for a visit by a team of examiners to the campus and, if needed, other sites hosting the proposed postsecondary degree activity. The purpose of the visit is to confirm documentation submitted by the institution evidencing compliance with standards of good quality education and to confirm whether the institution meets the other requirements established by the Board. The team of examiners shall be composed of at least one officer of the UNC System, faculty members with the appropriate levels and fields of education, and other persons necessary for a sound examination. The team of examiners shall be appointed by the president of the University of North Carolina, or the president's designee, and selected based on their expertise in specific fields related to the licensure proposal. One member of the examining committee shall be appointed chair, with responsibility for leading the examination and preparing the team's report and recommendations.

2. Applications for licensure to conduct postsecondary activity submitted by institutions which have not been previously licensed to conduct postsecondary activity require a site visit. Applications for licensure to conduct postsecondary activity submitted by institutions which have been previously licensed to conduct other postsecondary activity will ordinarily require a site visit when the field of study is a significant departure from previously licensed activity; when the proposed postsecondary activity is a different degree level than was previously licensed; when the proposed postsecondary degree activity relies on labs or other physical facilities which have not been previously reviewed or which will now be used in a substantively different way; and in accordance with 400.1.1[R] of the UNC Policy Manual, governing new sites and campuses in North Carolina. The UNC System may for good cause require a site visit for any proposed postsecondary activity. When the UNC System does not require a site visit, the proposed postsecondary activity will ordinarily be reviewed by a team of examiners remotely. Costs and honoraria for a site visits and other reviews of proposed postsecondary activity are borne by the institution. Such costs and honoraria will be set by the UNC System.

D. Report of Team of Examiners, Staff Report, Institutional Response, and Board Action

1. Following the site visit or other review of the proposed postsecondary activity, the team of examiners shall prepare a report and a statement of recommendations ("the team

report"). The team of examiners shall submit the report and statement of recommendations to the president of the University of North Carolina or the president's designee within thirty days, or as soon as possible after completion of the examination. All recommendations are advisory to the UNC System. The statement of recommendations accompanying the team of examiners' report should contain one of the following as concluding advice:

a. That the institution be issued a license;

b. That the institution be issued a license subject to specified conditions; or

c. That the institution be denied a license.

Prior to any action by the Board, the institution shall be provided the report and have the opportunity to respond to it in writing (the institutional response).

2. The UNC System shall review the team report and any institutional response and submit a report to the president or the president's designee (the staff report). After reviewing the team report, the institutional response, and the staff report, and after making any revisions to the staff report, the president or designee shall place the application for licensure on the Board's agenda and inform the institution of the date on which the application will be considered by the Board. The staff report will be included in the Board's materials for that meeting.

3. At the request of the institution, the team report and the institutional response shall be provided to the Board for consideration prior to the Board taking action on the application. An institution requesting that the team report and the institutional response be provided to the Board shall make such request to the UNC System in writing not less than 30 days prior to the date on which the Board will consider the application.

4. The Board's action is the final administrative action with respect to an application for licensure.

E. Procedure for Modification and Revocation of Licensure

1. The Board may modify or revoke a license or interim permit as provided herein. Modification of a license or interim permit may include imposing conditions on the license or interim permit or imposing an expiration date on a license or interim permit.

2. Modification or revocation of a license or interim permit may be based on a failure on the institution's part to maintain one or more of the standards enumerated in G.S. 116-15(f) and Section 400.4.1 of the UNC Policy Manual, or on the institution or any of its agents making a material misrepresentation to the Board, UNC System, or to students or prospective students.

3. When the president or designee determines that an institution has failed to maintain one or more of the standards or has made a material misrepresentation as described herein, the president or designee shall prepare a report for the Board detailing the basis for the revocation or modification and recommending the action to be taken (the violation report). The violation report will be served on the institution by United States mail to the address last provided by the institution on its annual report. The institution shall have 33 days from the mailing of the violation report to respond in writing, which time may be extended by the president or designee for good cause shown.

4. The violation report and the institution's response, if any, shall be provided to the Board for action, if the Board deems action appropriate. Notwithstanding the existence of a violation, the Board may allow an institution to remain licensed if the institution is

deemed by the Board to be making substantial and expeditious progress towards remedying its licensure deficiencies.

The Board's action, if any, is the final administrative action with respect to modifications and revocations of licensure.

VI. Annual Reports and Review of Licensure

A. Licensure of any licensed postsecondary degree activity shall be subject at any time to review by the Board to determine whether the postsecondary degree activity continues to meet standards for licensure. In the discretion of the Board, review of licensure may necessitate use of a team of examiners. Costs and honoraria of teams of examiners conducting reviews is borne by the institution and set by the UNC System.

B. Review of licensure of all of an institution's postsecondary degree activity conducted in North Carolina shall occur when:

1. Two years have elapsed since the Board first licensed the institution to conduct any postsecondary degree activity (the two-year review).

2. Subsequent to the two-year review, six years have elapsed, and again every six years subsequently, if the institution is accredited by an accreditor recognized by the Council for Higher Education Accreditation If the institution is not so accredited, then review of licensure shall occur every two years.

3. The institution is legally reconstituted.

4. Ownership of a preponderance of all the assets of the institution changes pursuant to a single transaction or agreement or a recognizable sequence of transactions or agreements.

5. The institution proposes to open a new campus or site, except that the UNC System may in its discretion elect to review only the postsecondary degree activity which the institution proposes to offer at the new campus or site.

C. Institutions offering licensed postsecondary degree activity shall file annual reports with the UNC System in a form and manner prescribed by the UNC System. Annual reports shall provide evidence of the institution's continued compliance with the standards set forth in G.S. 116-15(f) and Policy 400.4.1. Annual fees for postsecondary degree activity shall be set by the UNC System.

VII. Notifications from Licensed Institutions. Institutions which are licensed to conduct postsecondary activity shall provide notice to the UNC System in the form prescribed by the UNC System upon the occurrence of any of the following:

A. If the institution or any of its programs are accredited, any change in status to any such accreditation, including being placed on warning or probation;

B. If the institution or any of its programs are accredited, upon notification that any such accreditation is being reviewed, including regularly scheduled reviews;

C. The filing of any petition or application by the institution to become accredited by an accrediting body;

D. If the institution participates in Federal Student Aid (FSA) funding pursuant to Title IV of the Higher Education Act of 1964, as amended (Title IV), upon:

1. Notification that FSA is seeking to limit, suspend, terminate, or fine the institution, pursuant to 34 C.F.R. 668 Subpart G;

2. Notification that FSA is seeking an emergency action against the institution;

3. Notification that the Department of Education's Office of the Inspector General is auditing the institution;

4. Any change in the status or terms of the institution's Program Participation Agreement (PPA), including the PPA's expiration or the issuance of a provisional PPA;

5. The institution applying for recertification of its PPA and the Department of Education's determination whether the institution will be recertified or not;

6. If the institution is required to report to the Department of Education the proportion of its revenue which is derived from sources authorized by Title IV, upon a determination made by the institution or by the Department of Education, or any of its offices or components, that the institution has derived more than 90 percent of its revenue from sources authorized by Title IV for any year;

7. The institution posting a letter of credit or increasing an existing letter of credit, or the Department of Education demanding that the institution does so;

8. The institution being placed on any heightened cash-monitoring method of payment from FSA; or

9. A determination made by the institution or by the Department of Education, or any of its offices or components, that the institution's financial responsibility composite score is 1.5 or below.

E. The institution or its corporate parent learning that a governmental entity has begun a criminal, civil, or administrative investigation of the institution or any person or entity with an ownership interest in the institution;

F. In any audit conducted on the institution or corporate parent, including without limitation a yearly audit conducted to meet FSA requirements, the opinion expressed by the auditor is adverse, qualified, or disclaimed, or the auditor expresses doubt about the continued existence of the institution or corporate parent as a going concern;

G. The filing of any lawsuit, including a counterclaim or cross claim, against the institution, including any petition for bankruptcy of the institution or corporate parent;

H. Any loss of authorization to operate in another state, or a postsecondary education licensor of another state putting the institution on probation, warning, or a similar status;

I. Any substantive change in a licensed program. If the institution is accredited and the institution's accreditor has a substantive change policy, the term "substantive change" as used herein shall include all circumstances considered by the institution's accreditor to be a substantive change. "Substantive change" as used herein shall also include a change in the delivery method of more than one-fourth of the courses constituting a licensed program; or

J. The institution undergoes a change in ownership, as described in section 400.4.2[R] of the UNC Policy Manual. Notification of a change in ownership should be made not less than 90 days prior to the projected closing date of the change in ownership.

VIII. Delegation to the President. If the staff report is complete pursuant to section V.D.2., above, an institution which seeks to begin postsecondary degree activity prior to the next regularly scheduled meeting of the Board may be issued a license by the president or designee. The issuance of such a license is committed to the discretion of the president or designee and should ordinarily only occur upon a showing of hardship to the institution, students, or prospective students. In order for such a license to remain in effect past the next regularly scheduled meeting of the Board, the Board must ratify the issuance of the license at its next regularly scheduled meeting.

IX. End of Licensure

A. A license issued under this regulation continues in effect except as provided in this subsection.

B. A license or interim permit to conduct postsecondary activity ends when:

A. It is revoked as provided herein; or

B. The licensed or permitted postsecondary degree activity ceases to have any students enrolled, except that the license or interim permit may be continued in the discretion of the president or the president's designee for good cause shown; or

C. The institution fails to file a complete annual report in the form and manner prescribed by UNC System, or pay its assessed annual fee, by December 31st of a given year, except that the license or interim permit may be continued in the discretion of the president or the president's designee for good cause shown; or

D. If the institution was issued a license or interim permit subject to specified conditions, or its license was modified pursuant to section V.E., above, to include specified conditions (which conditions may include an expiration date), when the Board determines that the institution has failed to meet those conditions or that expiration date is reached; or

E. The Board fails to ratify the president's issuing of a license or interim permit at the next regularly scheduled meeting of the Board occurring after the president issues a license pursuant to section VIII., above, of this regulation.

X. Other Matters

A. Effective Date. The requirements of this regulation shall be effective on the date of adoption of this regulation by the president.

B. Relation to Federal and State Laws and Policies. The foregoing regulation is meant to supplement, and does not purport to supplant or modify, those statutory enactments, regulations, and policies which may govern or relate to the subject matter of this regulation.

Proposed Policy Changes for Authorization of Non-Public and Out-of-State Institutions		
Change	**Rationale**	**Document**
Create change-in-ownership guidance.	Statute and *Rules and Standards* require review of licensure when a change in ownership occurs. However, there is no existing written policy on how that review will occur, which has led to widespread confusion among institutions. The new policy explains when a change-in-ownership review will occur and the relationship between that review and licensing a new institution (i.e. when the new owner is itself an institution of higher education that will now operate in the state). We have made our guidance on reporting change in ownerships consistent with Federal Student Aid and the Community College System to simplify reporting for institutions we license.	400.4.1.2[R]
Create written notification requirements.	There are currently no written requirements that schools notify us of events which may lead to the school closing or failing to meet the standards for licensure. That lack of notification can make it difficult for staff to do what we should normally do when we believed a school was at risk for closure, such as ensuring the adequacy of its bond, that its students are being notified of teach-out and/or transfer-out opportunities, and that student records are being transferred to the NC Archives. Clarified notification procedures have also been requested from some licensees, who have complained that they do not know when Staff needs to be notified of changes in academic programming.	400.4.1.3[R]
Create procedures for suspension/revocation of licensure.	Statute requires procedures for revocation and suspension of licensure. Legally adequate written procedures which guarantee notice and a written hearing for the institution in question are necessary to protect the validity of any revocation or suspension action the BOG may wish to undertake.	400.4.1.3[R]

Delegate authority to President to grant interim licenses until BOG next meets	Institutions have complained that, even when staff is prepared to recommend their application, that they are sometimes unable to begin classes because the BOG has not met (e.g., staff is prepared to recommend approval in July, the academic term begins in August, but the BOG does not meet until September). This change allows the President to act in those cases, with the BOG to ratify (or decline to ratify) the President's action at a later meeting.	"Rules and Standards"
Strengthen and clarify bond language	Institutions generally ask us for a bond form, which we have not yet provided. This has led to a mish-mash of bond language being submitted. We want to ensure minimum standards for bonds in advance of a new bond form we are working on with the Community College system. The minimum standards are designed to prevent bonds from being lowered or cancelled without staff being notified, strengthen our ability to draw down a bond even if the school is closed (if, for example, the school closes and fails to transfer records), and prevent gaps in coverage.	"Rules and Standards"
Streamline initial licensure procedures: 1) End requirement that initial conference take place in Chapel Hill. 2) Consolidate steps for initial licensure. 3) Clarify when site visits are required and when site visits are discretionary, and require them in fewer instances. 4) Allow advertising (with disclaimers) prior to licensure, with notification to staff.	With these reforms and other process improvements already implemented, we intend to dramatically reduce the time it takes to form a staff recommendation for new applications. An initial conference, while useful, can take place via phone call or video conference. Requiring the CEO of the applicant institution to travel in person to Chapel Hill is unduly burdensome. In person meetings with an applicant institution's leadership can still occur during a site visit. Site visits are unnecessary each time an institution adds a new postsecondary activity. Instead, Staff should focus on ensuring licensees abide by the representations made during licensure through the 2/6 year review process. Allowing advertising with disclaimers of programs projected to begin after licensure allows institutions to recruit students to begin at the same time the program begins. Allowing this advertising,	400.4.1.3[R], "Rules and Standards," 400.4.1.1, "Staff Level Improvements" table.

5) Significant internal process improvements that do not require written changes (see table "Staff-level Improvements").	with appropriate oversight, is consistent with the practice of other states.	
Delegate authority to staff to set fees and honoraria	We have significant difficulty recruiting subject matter experts and financial reviewers based upon the current honoraria structure. Delegating this authority to staff would allow staff to make changes in honoraria as needed and to address special circumstances on a case-by-case basis.	"Rules and Standards," 400.4.1.3, 400.4.2

Staff Level changes to the postsecondary licensing scheme

September 19, 2017

Executive Summary: Leverage existing oversight by accreditors and ED to streamline licensure processes without abdicating student/prospective student protections. Identify "bright-line," legally-sufficient standards that we can consistently apply in order to lead us to common-sense and timely decisions (e.g., what standards can we apply so that schools like the University of Southern California don't take months to clear financial review).

Current Policy	Change	Rationale	Regulation or public-facing document current policy is referred to in
Site visits required each time an institution seeks to add a new degree program	Site visits discretionary for adding a new program. They will ordinarily be required when an institution adding a new program: (1) Is adding a new degree level for the first time (i.e., an institution that only offers associates degrees seeks to offer a bachelor degree); or (2) Is opening a program in a new 2-digit CIP code as defined by NCES (although in certain cases this may not be necessary, for example, adding programs in a different liberal arts discipline where the physical facilities will be the same as before and faculty credentials can	The current requirement is inconsistent with how other regulators (ED, accreditors) treat adding new programs. It is burdensome and expensive to institutions (meals, lodging, and honorariums for site visits).	"Timeline" doc arguably refers to it. Can be pulled down from website. See Page 28 of Standards – "Review *may* necessitate use of a Team of Examiners."

	be reviewed by desk audit). (3) Is opening a new program a component of which involves labs or clinical.		
Financial review required each time an institution seeks to add a new degree program.	Public institutions presenting a full-faith-and-credit letter are exempt. For private institutions, no automatic need for financial review. Factors to consider include: (1) Financial strength shown in the institution's yearly reports; (2) Length of time since last financial review (in initial licensure, 2 yr. review, 6 yr. review).	Exempting public institutions from financial review is consistent with FSA practice in many cases.	
Financial review required for all new institutions.	Allow for expedited financial review in certain cases (performed by staff OR outsourced financial desk audit rather than outsourced site visit): <u>Public Institutions:</u> may obtain a full-faith-and-credit letter from their state (will generally be sufficient standing alone).	Exempting public institutions from financial review is consistent with FSA practice in many cases.	

	Private Institutions: Factors to be considered in whether a staff review, outsourced desk audit, or site-visit audit include: (1) FSA financial score high enough for enough years. (2) Full (not provisional) participant in Title IV. (3) History of major findings in FSA Final Audit Determinations (we are cc'd on these). (4) Whether the institution is accredited and if so, by a regional, national, or programmatic accreditor. (5) If accredited, history (if any) of accreditor warnings/discipline based on financial issues.		
In-depth review required of religiously-exempt programs.	Refocus review to determine bona fides of religious nature of the program, and not on a "licensure-lite" process. To that end, prior to any board action (See Plcy Manual 400.4.1.1 mandating certain things in the review):	If program is truly a religious program under the statute, it is exempt from licensure. Also, there are inconsistencies between the statute and what we have been asking religiously-exempt institutions for – for example, statute clearly says an "institution" can be a sole	Policy Manual 400.4.1.1. Under this policy, there are limits to what we can do without board approval. Religious Exemption Application "Application Information for Religious Exemption"

	(1) Eliminate requirement to provide info on members of the board of directors (Exhibit F on the current form, not required by 400.4.1.1). No statutory/regulatory requirement that BoD exists. (2) Interpret 400.4.1.1(5)(b)(1) (requiring Articles of Incorporation to be provided) to only apply to institutions which are corporations. (3) Only review student catalog for evaluation of bona fides of religious nature of program and for exemption statement required by 400.4.1.1(c)(2) and (3) (currently review for refund policies, admissions policies, etc). (4) Review by-laws, if any, only for evidence of bona fides of religious instruction. By-laws may help show those	proprietorship, but we ask for Articles of Incorporation, By-laws, and the identity of the Board of Directors for religious exemptions. Running current "licensure-lite" program for religious exemptions is taking up over half of the Licensure Specialist's position's time. We should cut down on this time to shift Licensure Director's remaining admin duties to Licensing Specialist so that the Director can help work on bigger-picture, programmatic issues.	

	bona fides, but are not required. (5) Change the application form to remove those items we will no longer ask for, but to add that the institution should provide evidence of the bona fides of the religious nature of its programs. List examples – photos of the facility, evidence of affiliation with a particular place of worship or denomination, evidence that the IRS has determined it's a tax-exempt and filing-exempt organization.		
No charge for religious exemption applications	Begin charging nominal amount for review of religious licensures. Current BOG policy mandates yearly review of institutions we have given an exemption to (400.4.1.1(6)). Charge nominal amount for yearly review.	Charging small amount for religious institution exemptions is consistent with practice in many other state. Of states which offer a religious exemption from licensure at all, fees for the exemption range from nothing to $1,500/yr. NC currently has 151 institutions issued a religious exemption. Raising a total of $20,000 yearly from those institutions would be broadly commensurate with	There is no public-facing document explicitly stating there is no fee for the exemption. BOG policy 400.4.2 states that "a reasonable fee shall be set by the Board, on recommendation of the President, for initial licensure and for the addition of degrees for previously licensed institutions." It does not explicitly state that Board action

		the amount of time spent by the licensure specialist implementing the current BOG policy.	is required to charge a fee to issue an exemption. BOG policy 400.4.1.1 delegates authority to the President to "apply the provisions of GS 116-15 and relevant policies and procedures of the Board... to any application for exemption [because of religion]."

AGENDA ITEM

B-3. Report on the Health Professions Community Precepting Working Group ..... Warren Newton

Situation: Presentation of the report and recommendations from the Health Professions Community Precepting Working Group, as requested by the Committee on Educational Planning, Policies, and Programs.

Background: Dr. Newton presented a report entitled "Community Precepting Crisis in North Carolina" at this committee's meeting on July 28, 2016. That report covered the results of a survey requested by the committee earlier and concluded that, while the supply of community preceptors seemed relatively stable, the rapid growth of health science programs has created excessive demand and concern about the number and quality of precepting sites. The result is an emerging crisis of availability of community based teachers for the training of medical students, nurse practitioners, and physicians' assistants. This committee asked Dr. Newton to convene a working group to review policy options, including legislation in other states, and give recommendations for improving the quality of community-based education across the health professions.

Assessment: The Health Professions Community Precepting Working Group consists of 21 professionals representing leadership of diverse health professions (including medicine, nursing, physician assistants, pharmacy, and allied health), NC public and private universities, the NC Community College System, NC health care systems, and NC AHEC. The working group focused on recommendations to improve community based education via a more consistent and robust system of precepting. The report's recommendations include policy priorities such as: a common "Health Professional Education Passport" standardizing the student credentialing process for immunizations, criminal background checks, HIPAA, etc.; and, an individual state tax credit for community-based providers who precept students. Additional recommendations include a more robust community faculty development system, identification and dissemination of best practices in clinical faculty compensation plans, and the development of model teaching practices that have students from multiple professions year round. Following up his report on the outcomes of NC medical schools, Dr. Newton will also describe policy priorities to help the health professional education more responsive to the needs of North Carolina.

Action: This item is for information only.

Summary Report
Community Based Education for the Health Professions
UNC Board of Governors
1/2/18

Background

As health care moves rapidly from hospitals to community settings, clinical education in community practices is increasingly important. Over the last five years, however, there has emerged a statewide crisis in the availability of community preceptors, who teach in community settings away from academic centers, as new schools and increased enrollments have led to at least a 40% increase in demand across the state for precepting in community practices over four years. This increase in demand has been exacerbated by significant changes in the time available for teaching, changes in compensation plans for clinicians and challenges in preparing community clinicians for their faculty role.

To address this problem, the UNC Board of Governors convened a statewide work group of educational leadership from a wide variety of institutions and professions to give recommendations for solutions. Attachment A lists the names, titles and institutions of members of the work group. Warren Newton, MD, MPH and the North Carolina AHEC program facilitated the process, with support from the UNC General Administration.

Recommendations

Our initial focus was community-based preceptors--practicing clinicians who see patients in community settings away from academic centers in primary care and related disciplines. Our 2016 survey (Attachment B) of the 29 NC health profession schools indicated that all disciplines face the same challenge of securing an adequate number of quality, community-based teaching sites.

The work group first considered priorities for public policy. Both public and private institutions contribute meaningfully to the state's health professions workforce, and we believe that it is in the public interest to coordinate the contributions of all institutions as much as possible. The work group therefore recommends supporting the community precepting efforts of both public and private higher education institutions to the extent they produce clinicians who practice in the state and contribute to workforce diversity. In addition, if resources are limited, we recommend prioritization of community practitioners who work in rural counties as defined by the North Carolina Office of Rural Health or those who work in community practices with substantial numbers of uninsured or Medicaid patients.

The work group also recommends bold action to improve the quality of community based health professions education, addressing both numbers and ongoing faculty development, or preparation of community based preceptors in their increasing role as faculty members:

1. **Pilot a tax credit for community based health education preceptors**
    - A 3-year pilot of a tax credit for community based clinicians (MDs, DO, NPs, DNPs, PAs, and CNMs) who do not receive personal payments for precepting from any other source and precept students from any of these professions from any North Carolina higher education institution.
    - Each month or 160 student-hours of precepting would qualify for a $1,000 tax credit, up to a maximum 10 student-months in a calendar year.
    - In order to receive the tax credit, community preceptors would participate in annual faculty development, as provided or approved by their collaborating educational institutions.
    - North Carolina AHEC will work with preceptors and schools to provide independent verification to the state of clinical teaching involvement and participation in faculty development. AHEC will devote 2018-19 to working with partner schools to operationalize the system and report regularly to the UNC Board of Governors and the legislature about the progress and effectiveness of the program, including the long-term success in keeping students in North Carolina.
    - There will be formal review of pilot results after 3 years with consideration of extension to community-based preceptors in pharmacy, nursing, allied health and other health disciplines.

2. **Develop a health education passport for all North Carolina health professional students**

The goal is to streamline the student education onboarding process at any community practice or hospital anywhere across the state. Building on the regional success of the Wake AHEC Consortium for Clinical Education and Practice (CCEP), AHEC will work with all North Carolina health professional programs, health systems and hospitals to develop a common "passport" of uniform requirements for immunizations, drug testing and criminal background checks and common training for HIPAA, safety, and other topics. As much as possible, records and training will be available on line, in advance of the clinical rotation and available anywhere in the state; individual institutions, practices and professions may supplement this with specific information.

3. **Support innovation in community health education through regional and statewide pilot projects, including:**

    a. *Establishing a statewide community preceptor faculty development program*--- Professional development of community-based faculty as educators is the foundation of improving

community-based education. This is the joint responsibility of both the preceptors and the schools, and will be shaped by the accreditation requirements of different professions. Working with both the schools and professions, AHEC will coordinate the development of joint on line and in person opportunities for preceptor development, which will be interprofessional and interinstitutional as much as practical.

b. *Launching a statewide academy of community educators* working across schools and professions to provide support and educational development for community based preceptors

c. *Certified Teaching Practices* – Using standards developed collaboratively by the health professional schools, North Carolina AHEC will work with partner schools to identify and certify exemplar teaching practices across the state that are committed to excellence in community based health education and in measured quality of clinical care. In return for financial and other support, these practices will commit to teaching students most of the year, work with students from more than one profession, provide ongoing development of faculty and staff as teachers, and demonstrate excellent care as measured by access and chronic care metrics. The practices will model ongoing improvement of quality and cost-effectiveness of care.

The work group also reviewed other state and national initiatives addressing the community preceptor crisis. We enthusiastically endorse North Carolina-led national efforts to liberalize Medicare rules for documentation of students' contribution to care under appropriate supervision. We recommend identification and dissemination of best practices for supporting students' value to community practices including quality improvement, health coaching and improvement of documentation, including team-based records. Finally, we recommend identification and dissemination of best practices in health system compensation plans which support health professional education.

Community-Based Health Professions Education: Who Will Teach Our Students?

A Report by the NC AHEC Program

July 11, 2016

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Introduction

In recent years, there has been a great increase in concerns expressed about the availability of community based precepting sites for health professionals. At the request of UNC General Administration, North Carolina AHEC has undertaken a study of the issue with a survey of health professions schools and its own office of community education data base. In addition to a general description of the current educational environment, this report addresses three questions:

1) *What is happening to the **demand** for community-based precepting in NC?*
2) *What is happening to the **supply** of community preceptors and precepting sites in NC?*
3) *What is the **impact of changes** in the availability of community precepting on the quality of education?*

For the purposes of this report, the following terms will be used:

Community precepting: Refers to teaching students "off campus" away from an academic center and could include both outpatient and inpatient sites.

Preceptor: Any healthcare provider (nurse, physician, physician assistant, pharmacist, allied health professional….) who teaches a student(s) at their practice setting.

Preceptor site (also referred to as clinical training sites or teaching sites/practices): Refers to the setting where a preceptor is based.

This report will emphasize primary care and other outpatient teaching sites (e.g. private practices, health departments, community health centers).

Current Educational Environment for Health Professionals

All postsecondary health science schools rely on community-based health care providers to teach and mentor their students in "real life" settings. Health science programs include all undergraduate and graduate programs within the 17 campus UNC System, the 58 NC Community Colleges (*http://www.nccommunitycolleges.edu*), and 36 private schools of the NC Independent Colleges and Universities (NCICU, *http://www.ncicu.org*). Students may spend anywhere from a few days to several months with community preceptors, many of whom are not paid for their teaching role. All schools believe that such community experiences are an essential part of health professional education; many schools believe that as health care moves out of hospitals in community and ambulatory settings, education in these settings is becoming increasingly important educationally, and most believe that community based rotations in rural and underserved communities are critical to their efforts to encourage health professional students to settle and stay in the state and in areas of need.

North Carolina AHEC was founded in 1972 to support community based education, and from its inception has supported community based health care, education and housing in rural and underserved communities across North Carolina, working closely with all medical schools (at the time four) and almost all health professional programs at the university and community college levels.

Although schools and health systems vary in how many students they can place in community practices they own or manage, all schools must go outside their own systems to place students. Recognizing the importance of community based health professions education, the legislature funded an expansion of support for precepting and for regional education in the 1990s. Although total funding decreased with the loss of state revenue with the last recession, current

AHEC support of community-based education includes:

- ✓ $1 million annually in financial incentives to 2,400 community preceptors at 1,500 sites
- ✓ Annual nursing grants for development of community precepting sites
- ✓ Free preceptor access to library & information technology and preceptor development activities
- ✓ Student housing in 50 counties to enable student participation in community educational settings
- ✓ Supporting new approaches to coordinate educational activities across sites, across schools and across professions.
- ✓ Convening academic leaders from all professions to foster collaborative problem-solving around community based education.
- ✓ Support for academic centers to pilot new models/best practices of community precepting and new curricula, and to develop training for the new professions being created by changes in the health care system.

The demand for community based education has grown rapidly since the early 1990s. In 1995, AHEC Offices of Regional Primary Care Education (ORPCE) supported 700 community teaching months and grew to 4,000 months by 2005. AHEC currently facilitates community-based, primary care education for students in Medical, Nurse Mid-wifery, Nurse Practitioner (NP), Physician Assistant (PA) & Pharmacy programs at these nine institutions: Duke, ECU, UNC-CH, UNC-C, UNC-G, UNC-W, WCU, WFU, and WSSU, and is able to cover approximately half the need from these and other schools.

Over the last five years, with the passage of the ACA (health care reform) and significant shifts in the health care industry, the health care and health professional education environments have undergone further and dramatic change. North Carolina hospitals have consolidated rapidly, with the total number of independent hospitals dropping from the 120's to less than 14 in the last few years, most physicians have become employed, and EHRs have spread to virtually all hospitals and practices, significantly changing workflow and slowing down patient care. In response to an increasingly competitive environment, most integrated health systems have adopted rigid incentive plans which do not recognize any teaching component, so that practitioners who teach do so at the risk of cuts to their take home pay. Taken together, all of these fundamental changes strongly influence the structure and processes of community based education across the state.

In response to these changes, health profession schools have changed their curricula significantly—what they teach, how they teach and increasingly where they teach. In general, they are increasing the time spent in ambulatory and primary care, reflecting the overall changes in health care, while also developing new curricula in quality improvement, population health and interprofessional education.

Finally, as a consequence of these and other changes, the actual mechanics of teaching students in the community setting has become much more complicated. Onboarding of students now includes criminal background checks, providing access to and training in electronic patient records, training in HIPAA regulations, core immunizations (which vary by institution) and often screening for illicit drug use—a series of time consuming hurdles which often impact both the educational experience and often the preceptors. A recent development is that two health care systems have concluded that because of the substantial indirect costs of teaching, they must explicitly set a limit on the numbers and schools of students they teach—and one system has begun to charge a substantial fee to cover the real costs of onboarding students.

It should be emphasized that North Carolina is not alone. Our AHEC colleagues in Indiana,

New Hampshire, SC & Georgia recently presented at the National AHEC Organization (NAO) Conference on "The Emerging National Preceptor Crisis." 39 AHECs from across the country responded to their questionnaire confirming a crisis of availability of community preceptors. Two legislatures have enacted tax changes to increase the supply of teachers, and several others are considering similar moves.

Methods

We collected information from three sources. First, AHEC leadership has met with the leadership of all medical schools, all NP/DNP training programs and all PA programs several times to get their perspective on the situation. Second, we conducted a formal survey of 29 health professions schools in medicine, nursing, physician assistant and pharmacy (Appendix A) in the spring of 2016 to collect a full perspective on the issue (see Appendix B for survey questions). We had a 100% response rate. Third, we reviewed selected components of our health profession education data base. We also reviewed the literature, including two benchmark studies of precepting in NC and reviewed experiences from other states around the country.

Results

Has demand for community based precepting in North Carolina increased?

At least 8 new graduate health science schools have started since 2011, increasing enrollments by 27% (407 new students). The most rapid growth is seen in the PA profession with 6 new schools (175 students) in the last 5 years. Medicine and Pharmacy each have 1 new school and although no new graduate level nursing schools were established during this time frame many existing programs transitioned to the Doctor of Nurse Practitioner (DNP). Federal funding has supported large increases in sizes of many PA and NP/DNP programs. Based solely on enrollment data, a further overall increase of 11% in preceptor demand through FY 2018 is expected (Appendix C).

Moreover, enrollment numbers probably underestimate the increase of demand for community based rotations, given that curricula are changing to increase the amount of time in community settings. As depicted in Appendix D, **93% (27 of 29 schools) projected an increase in the need for precepting sites over the next 5 years**. Schools rated larger sites (59%) and more specialty preceptors (52%) equally as important. Although critical shortages occur in all clinical specialties and vary widely with region of the state, Ob-Gyn and Pediatrics were in most demand within the last 12 months with 24 and 18 schools respectively reporting significant challenges.

In addition, we anticipate that SARA will bring additional demand. North Carolina is viewed nationally as rich in community training sites and quality preceptors, and even though out-of-state & online programs may not have a brick-and-mortar presence in NC their students still complete on-site rotations within our 100 counties. Indeed, our survey demonstrated that the impact of out-of-state schools is already being felt, especially among NP/DNP & PA programs. In the past 12 months, 14 schools (48%) reported that out-of-state students had prevented their students from securing NC precepting sites (5 NP/DNP, 7 PA, 1 med, 1 pharmacy) and 11 schools (38%) reported their students choosing out-of-state rotations due to lack of available sites in NC (4 NP/DNP, 6 PA, 1 med).

Please note that our report and survey focus primarily on clinicians (MD/DO/NP/DNP/PA) in community settings. Increasingly, community college and pharmacy schools will be seeking rotations in the community, potentially creating further demand for experiences.

What is the available (and potential) supply of community preceptors and precepting sites in NC?

There exists no comprehensive statewide databases that include all community precepting sites, but AHEC supports community education for all professions and most schools across the state, and AHEC data are the best available on the supply of preceptors. AHEC also has provided practice support in over 1,200 practices, which provides another perspective on community precepting sites.

Importantly, despite increasing demand, the number of AHEC ORPCE sites and preceptors has remained fairly consistent over the last 10 years, averaging 1,300-1,500 sites and 2,200-2,300 individual preceptors annually. We estimate at least 70% of our teaching sites and preceptors are the same from year-to-year. Review of our practice support data base suggests that most (64% or 730 of 1,143) sites have students: thus there is at least a theoretical potential of 36% (over 400 sites) potentially available for students.

Length of community rotations vary from 1-2 days a week spread out over a semester to 4-8 week blocks (or longer) at one site. 75% (1,132 of 1,517) of AHEC sites take student(s) from only 1 university and 1 discipline; less than 6% of our sites take students from 3 or more universities or disciplines. Multiple reasons exist for sites limiting teaching to certain schools and disciplines; a major influence is alumni ties of the practicing clinicians, and another is accreditation rules for the disciplines. Increasingly schools from all professions are securing community precepting sites farther from campus and across the state.

Since teaching students represents a substantial commitment by a practice, they typically decide on how many students they will take in a given year. We observe that many practices take students for only a small part of the year—i.e., one or two 4-6 week sessions over the whole year. The limitations of our data (and time for analysis) preclude us from a firm estimate of this extra potential capacity, but we believe it will be sizable. Having students in sites for more of the year would greatly decrease the numbers of sites needed, as well as potentially improving support and development of community faculty.

What is the impact of the current crisis in community precepting?

A critical question is whether our current preceptors will continue to accept students. AHEC has conducted two major studies of preceptors across all health professions across the state in 2005 and 2011 (*"Satisfaction, motivation, and future of community preceptors: what are the current trends?" Academic Medicine, Vol. 88, No. 8/ August 2013).* This is unique data nationally because it deals with the whole state, all the preceptors across all professions in our data base (approximately 2,300), and has an acceptable response rate. There was little difference in the two surveys. In the most recent survey (2011), the vast majority of the respondents were satisfied with precepting (91.7%), anticipated continuing to precept for the next five years (88.7%), and were satisfied overall with their professional life (93.7%In these two studies). While overall differences across the professions were modest, physicians reported significantly lower overall satisfaction with extrinsic incentives.

Given the dramatic changes in the practice environment, however, will this change? How many practices will stop teaching? AHEC plans to undertake a new study of preceptors in the upcoming year. Our survey give reason for concern: 69% or 20 schools reported at least one precepting site stopped taking their students in the last 12 months. Reasons included that they were already committed to precept for other schools, incentives not adequate and health systems changes what they allowed or incented.

There is also only modest emphasis on preceptor development. Like all who teach, community clinicians who teach the next generation need both initial and ongoing development. While most schools offer or identify preceptor development resources, and all 29 schools were "Moderately-to-

Extremely" satisfied with the quality of their preceptors, only 6 of the 29 schools (21%) require specific training—and none of the 5 medical schools and most schools (66%) reported dropping at least 1 site in the past 12 months due to concerns about the quality of teaching, safety of students or that a site was unable to meet curriculum requirements.

Incentives for community preceptors, both in kind and direct financial, are currently a major concern for schools. As shown in Appendix E, most schools do provide some benefits, from continuing education to help with practice to direct financial incentives. With regard to financial incentives, although schools may not be completely transparent about this issue, we know that 27 of the 29 schools surveyed rely on some form of financial incentives to their preceptors and that furthermore, given the changes in the organization and incentives of practice, preceptors often do not receive the payments for teaching but rather it goes to the practice. For many of the schools, the payment to preceptors comes from AHEC, which is modest, at a maximum of $113/week ($450 month) for up to 40 hours contact time. AHEC does not have the funds to extend payments to any of the new schools, and a number of MD/DO, NP/PA and Pharmacy schools have begun to give significantly higher incentives.

Are financial incentives necessary for preceptors to teach? Historically, teaching students has been something done out of professionalism—it is, after all, part of the Hippocratic Oath. Given the very real impact on time and money of having students, this is still the case for almost all preceptors. However, with the huge pressures on care and finance in community settings, the issue must be raised, along with who will pay for it.

Summary and Next Steps

Our study suggests that the major cause of the emerging precepting crisis in North Carolina is a dramatic increase in demand—across health professions and both public and private. Furthermore, the precepting crisis has begun to impact educational quality and the development of educational programs. At the same time, our work with the educational leaders, the survey and experience in the field suggest a number of possibilities for improving the situation. These include increasing the supply of community based preceptors through tax deductions or credits, reducing the burden on practice by harmonizing requirements across schools, working with schools to improve preparation and ongoing development of community preceptors and helping to prepare students to help the practices.

We believe there are important strategic and policy issues to consider. Community precepting is critical to the interests of the state in recruiting and retaining its health professionals. This is increasingly true as health care continues to move from hospitals into communities. Yet the sites of training—the community practices—are in a state of dramatic change, and that change is impacting education significantly.

We recommend development of a task force to review options and policy for going forward. Key issues include establishing the policy goals for the state, including reassessing the value and importance of aligning public and private institutions as well as universities and community colleges, the need for tracking the problem, and addressing the impact of rapidly escalating student loan debt. In addition, the UNC system should explore specific policy solutions, such as the tax deductions and credits legislated by other states, engagement of health care systems and payers, regional coordination, housing capacity, systematic programs for development of both preceptors and students, student loans and the need for curricular innovation in how to teach in the community setting across schools and professions.

North Carolina AHEC would like to acknowledge the outstanding support from the health professions schools across the state, both in collecting the data for this report and in working creatively and collaboratively to improve education for the state's health professions students.

Appendix A: The Health Professions Schools Surveyed (29 Total)

Doctors of Medicine (MD) & Osteopathic Medicine (DO)

1) Campbell University
2) Duke University
3) East Carolina University
4) UNC-Chapel Hill
5) Wake Forest University

Nurse Practitioner (NP) / Doctor NP (DNP)

1) Duke University
2) East Carolina University
3) Gardner-Webb University
4) UNC-Charlotte
5) UNC-Chapel Hill
6) UNC-Greensboro
7) UNC-Wilmington
8) Western Carolina University
9) Winston Salem State University

Doctor of Pharmacy (Pharm D)

1) Campbell University
2) High Point University
3) UNC-Chapel Hill
4) Wingate University

Physician Assistant (PA)

1) Campbell University
2) Duke University
3) East Carolina University
4) Elon University
5) Gardner-Webb University
6) High Point University
7) Lenoir-Rhyne University
8) Methodist University
9) UNC-Chapel Hill
10) Wake Forest University
11) Wingate University

Appendix B: Survey Questions

1. What are the current and projected new student enrollments for your program? If your program is new, please start with the first year that clinical rotations begin. 2015-16 _____ (current year)
2016-17 _____
2017-18 _____

2. Think about clinical rotation requirements for a new student starting in 2016-17 (for new programs, first year of rotations). How much time (months, weeks or hours) will be required in each setting in order to complete your program? *(Month= 20 days, week= 5 days, day= 8 hours)*

- Ambulatory/outpatient settings_____ (Private practices, FQHCs, health departments, community pharmacies...)
- Inpatient/hospital settings _____

3. Please estimate your need for precepting sites over the next 5 years? Check all that apply.

- More sites
- Sites able to accommodate larger numbers of students
- More specialty preceptors (list clinical areas needed) _____
- other _____

4. During the last 12 months, how satisfied have you been with the overall quality of preceptors that teach your students? *Preceptors = any health care providers (physicians, nurses, pharmacists, physician assistants) who teach students in their practice settings*

- Extremely satisfied
- Very Satisfied
- Moderately
- Slightly satisfied
- Not at all satisfied

5. Currently, what do you do to prepare preceptors to teach?

- Require specific preceptor training
- Offer training/materials to preceptors (not required)
- None of above
- Other preceptor preparation:

Please elaborate on type and length of any training you offer or require:

6. How many precepting sites have you intentionally stopped using in the last 12 months?

7. What were the most common reasons for dropping a site? Check all that apply.

- Concerns about the quality of teaching
- Safety of students
- Did not meet curriculum requirements (ex: insufficient patient population)
- Logistical issues (lack of adequate student housing, too long of drive for students...)
- Difficult to work with
- Other _____

8. To your knowledge, how many precepting sites decided to stop accepting your students in the last 12 months? What were the reasons they gave for not accepting your students? Check all that apply.

- They committed to take students from other schools
- Teaching students is not valued/encouraged by their site
- Feeling burnt out from teaching
- Incentives not adequate
- Other_____

9. What type of outpatient preceptor sites were most difficult to secure in the last 12 months? Check all that apply.

- Behavioral health/psychiatry
- Family Medicine
- General surgery
- Internal Medicine
- OBGYN
- Pediatrics
- Other _____
- No difficulties securing sites

10. What type of inpatient preceptor sites were most difficult to secure in the last 12 months? Check all that apply.

- Behavioral health/psychiatry
- Family Medicine
- General surgery
- Internal Medicine
- OBGYN
- Pediatrics
- Other _____
- No difficulties securing sites

11. What AHEC student/preceptor services does your program currently utilize? Check all that apply.

- AHEC Digital Library or other Information Technology services
- Assistance in finding/recruiting preceptors
- Gatekeeping for practice sites (i.e. coordinating placement for students at 1 or more sites)
- Preceptor development or recognition activities
- Preceptor payments
- Student housing
- Other _____
- None of above

12. Aside from AHEC, what incentives does your program currently offer preceptors/sites? Check all that apply.

- Appreciation dinners, recognition events, awards
- Continuing Professional Development at reduced fee/no charge
- Direct FTE support (support all/part of annual salary of an FTE in exchange for teaching students)
- Faculty appointments
- Information/ Library/ Technology services
- Payments to preceptors or sites based on number of weeks/months of teaching
- Other _____
- None of above

If "Payments" checked above, then:

13. What is the maximum range of payments your school currently provides to sites/preceptors?

- Less than $250 month
- $250-$499 month
- $500-$999 month
- $1,000 -$1,499 month
- $1,500 – $1,999 month
- $2,000 -$2,499 month
- $2,500 - $2,999 month
- $3,000 or more month

14. To your knowledge in the last 12 months, have students rotating from out-of-state programs prevented your students from securing preceptor sites?

Yes/No *If yes* Please describe

_____

15. To your knowledge in the last 12 months, have students chosen out-of-state rotations due to lack of availability of sites in NC? Yes/No If yes please describe_____

16. Thinking of your program's precepting needs over the next 5 years, what solutions, strategies or resources would be most helpful?

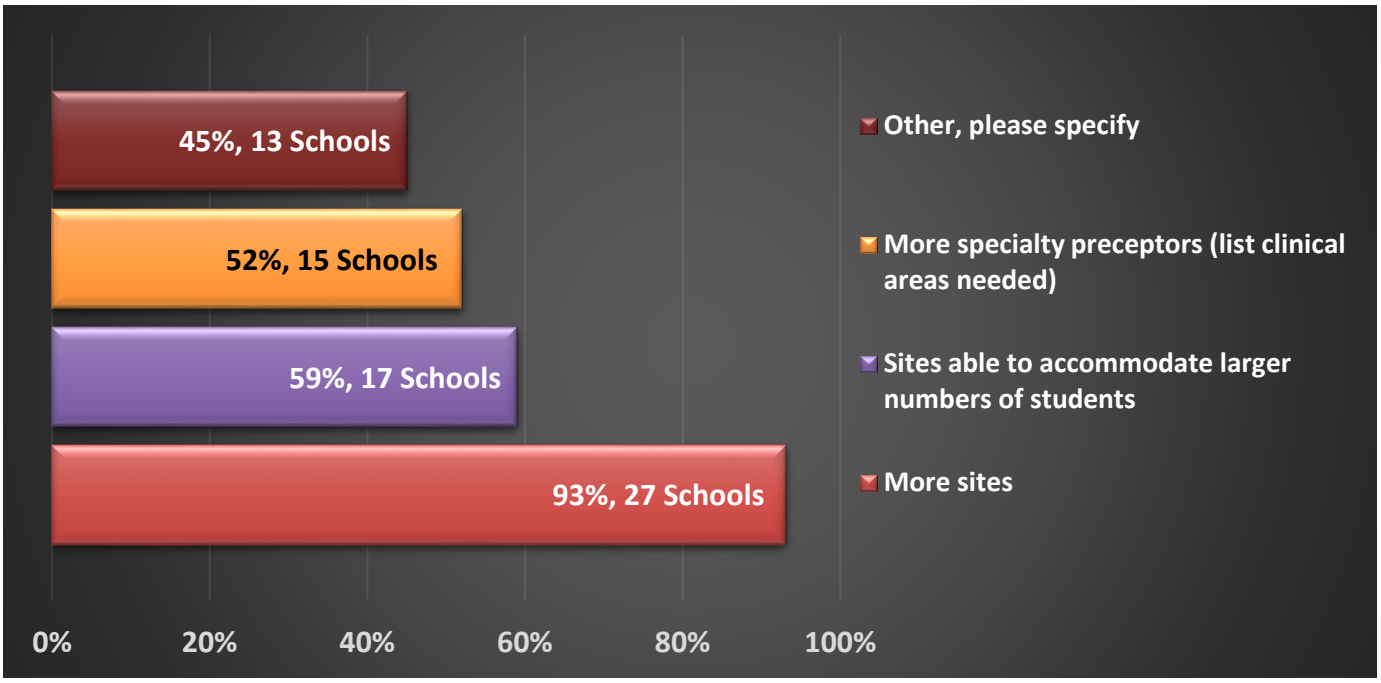
17. To complete the survey, please enter any comments about your precepting needs in the space below and select "Submit" when finished.

Appendix C: Projected Enrollments

6/3/2016		Enrollments - New students per class			
University	**Program**	**2015-16**	**2016-17 projected**	**2017-18 projected**	**Projected % increase**
NP/DNP					
Duke	NP/DNP	125	125	125	
East Carolina	NP/DNP	79	93	97	
Gardner-Webb	NP/DNP	58	58	58	
UNC -CH	NP/DNP	91	98	97	
UNC-Charlotte	NP/DNP	46	52	54	
UNC-Greensboro	NP/DNP	26	26	26	
UNC-Wilmington	NP/DNP	0	8	15	
Western Carolina	NP/DNP	30	31	33	
Winston Salem State University	NP/DNP	16	20	30	
NP/DNP Totals		**471**	**511**	**535**	**14%**
Physician Assistant					
Campbell	PA	44	44	50	
Duke	PA	90	90	90	
East Carolina	PA	34	36	36	
Elon	PA	38	38	38	
Gardner-Webb	PA	22	29	31	
High Point	PA	19	21	35	
Lenoir-Rhyne	PA	0	32	40	
Methodist	PA	40	40	40	
UNC-CH	PA	20	40	40	
Wake Forest	PA	90	90	90	
Wingate	PA	50	50	50	
PA Totals		**447**	**510**	**540**	**21%**
Medicine					
Campbell	SOM	162	162	162	
Duke	SOM	115	115	115	
East Carolina	SOM	80	80	80	
UNC-CH	SOM	180	180	180	
Wake Forest	SOM	120	125	125	
Medicine Totals		**657**	**662**	**662**	**1%**
Pharmacy					
Campbell	SOP	104	104	104	
High Point	SOP	0	70	70	
UNC-CH	SOP	150	145	145	
Wingate	SOP	108	100	100	
Pharmacy Totals		**362**	**419**	**419**	**16%**
Grand totals		**1937**		**2156**	
Projected growth of all 29 programs from FYs 2016-18 = 11% (219 students)					

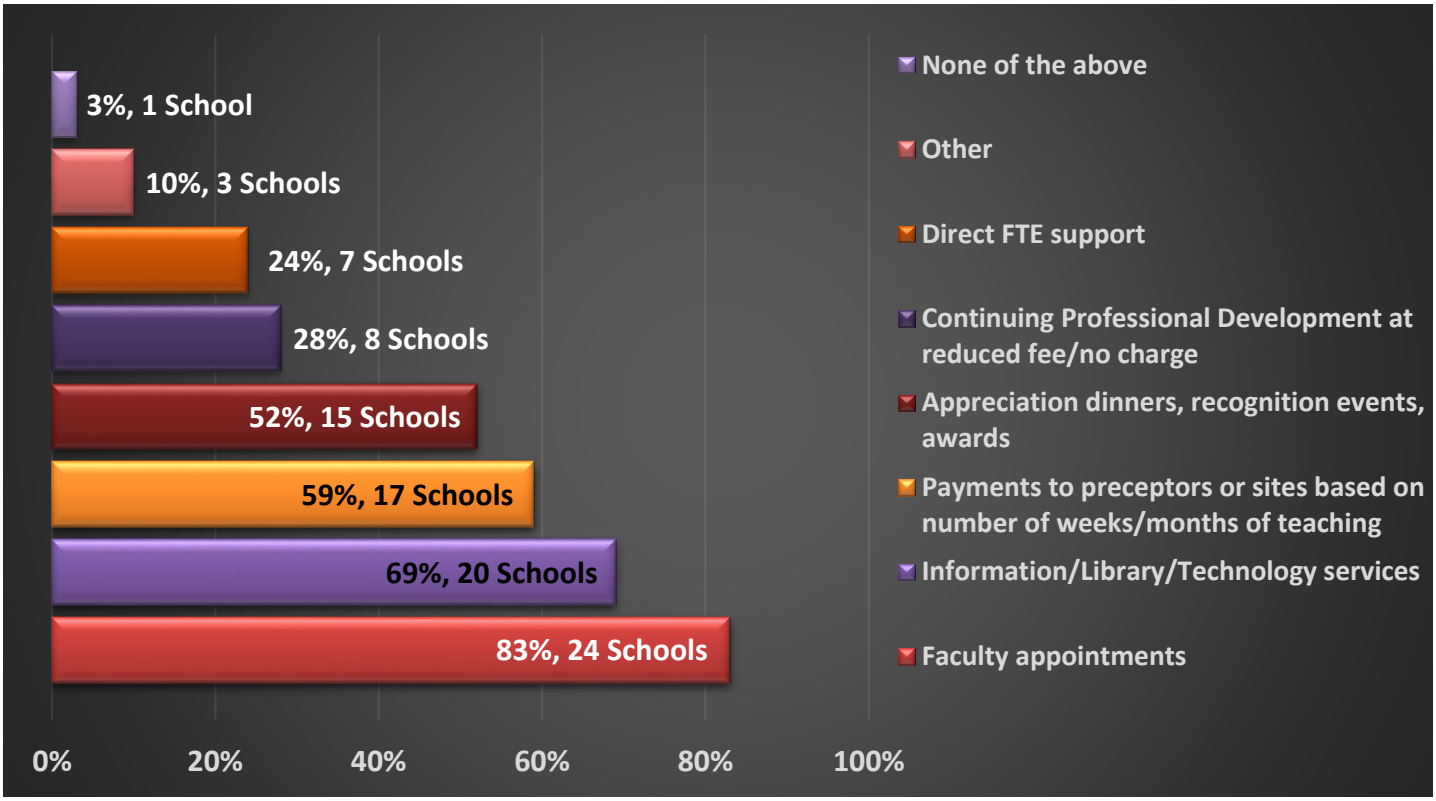
Appendix D: Graph of needs for precepting sites

How would you estimate your need for precepting sites over the next 5 years?
All programs (N-29. Check all that apply.)



Appendix E: Graph of incentives offered to preceptors/sites

Aside from AHEC, what incentives does your program currently offer preceptors/sites?
All programs (N-29. Check all that apply.)



Towards a Health Professional Pipeline: Recommendations from Precepting Work Group and A Broader Strategy for Primary Care

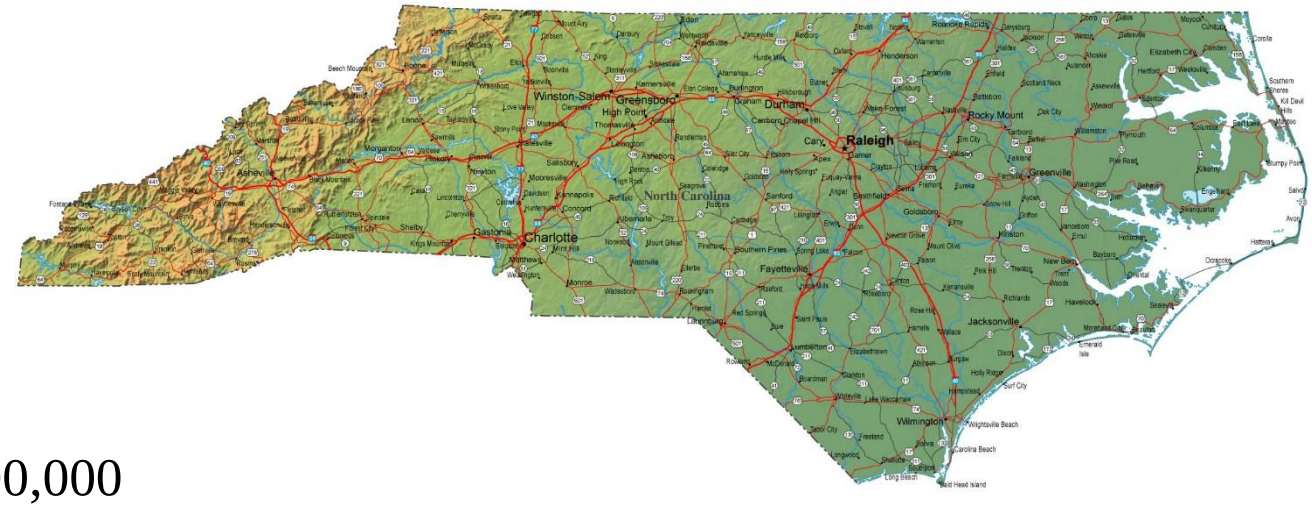
January 25, 2018

Warren P. Newton, MD, MPH,
Vice Dean & Director, NC AHEC Program

Goals for Today

- Context: Ongoing Changes in Healthcare
- Work Group on Community Precepting
  - Rationale
  - Recommendations
- Policy priorities for primary care and community based professionals

North Carolina

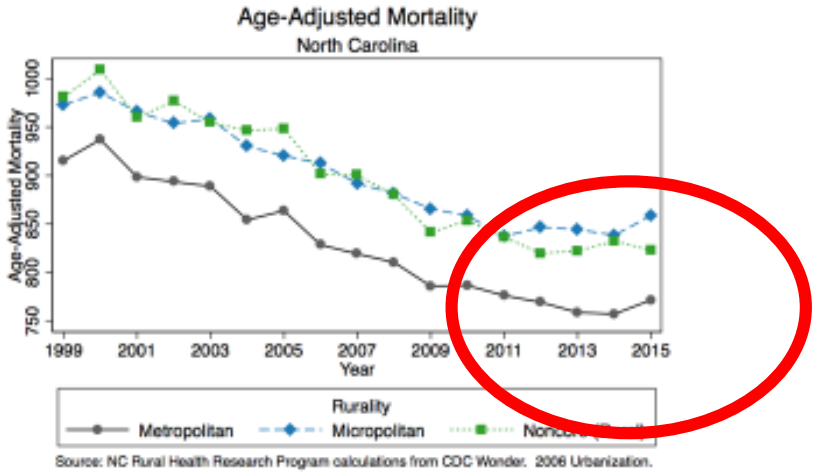


~10,000,000
About 32% minorities
25% rural
36th health outcomes,
with great disparities

Rural Mortality Has Started to Increase

Rural Health at a Glance

- Rural areas poorer health on almost every measure
  - Older, poorer, more isolated
  - **Persistently higher mortality**
- Less healthcare infrastructure
  - Fewer docs, smaller hospitals
  - Half of rural hospitals lose money
- 120 rural hospital closures since 2005



Transformation in Health Care

- Hospital consolidation is continuing…
- Cost has re-accelerated
- Insurance changing dramatically; Medicaid reform is soon.
- Growth in MD, DO, NP/DNP, PA programs, but <1/2 going into primary care
- Modest expansion GME (Cape Fear, Carolinas, Cone, ECU, New Hanover, MAHEC/Mission, UNC)

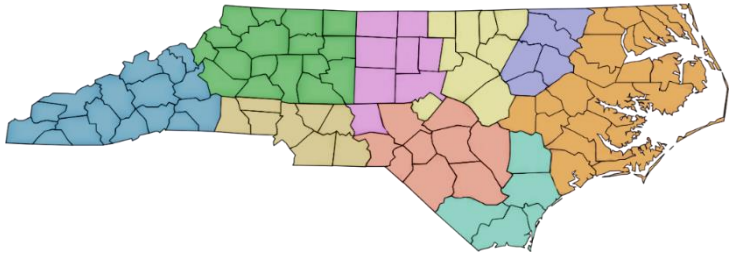
The Problem

- Primary Care and related disciplines needed to:
  - move care out of hospitals
  - improve quality and cost-effectiveness
- What we are getting is not what we need
- We need both quantity and especially distribution

Why Now?

- This is a time of *transformation*, not *usual* change
- A key part of the puzzle will be the people we train: the right educational experience can change our students' lives and the communities they live in.
- We can make a difference!

Why AHEC?



MISSION

To meet North Carolina's health and health workforce needs by providing educational programs and services that bridge academic institutions and communities with a focus on underserved populations.

VISION

To help lead the transformation of health care education and services in North Carolina.

BY THE NUMBERS

9 Regions, 20 Residencies, 1400 Practices, 2500 Preceptors and 200,000 Hours of CE, work with all medical schools, nursing programs, and almost all community colleges

Work Group on Community Health Precepting

Survey Results and Recommendations

2016 Survey of NC Health Professional Schools

- What is demand for precepting?
- What is supply of community preceptors?
- What is impact of shortage on the educational programs and students?

Methods

- Focused on community precepting—primary and ambulatory care.
- 2015-16: meetings with educational leaders across all disciplines.
- Survey of all 29 health profession schools with 100% response.
- Exploration of what other states are doing.

Results—Demand

- **27%** increase of enrollment since 2011 with a further **11%** estimated over next 2 years.

This is likely an underestimate: Changing curricula are driving more community time.

- **93%** of schools report increased need, in all clinical specialties, particularly OBGYN and PEDS.
- **SARA** will likely increase the demand.
- Happening all across the country.

Results—Supply

- AHEC provides modest stipends for 1,300-1,500 sites for many but not all schools; number is stable with 70% same year to year.
- Most schools provide a variety of non-financial incentives; stipends are spreading…
- Preceptor surveys in 2005 and 2011 show stable commitment; 2016 is similar but slight increases in concerns about impact of students on compensation
- Most practices take students from one school and limited number in year.

Result—Impact of Shortage

- A **major** issue for the schools!
- Most report satisfaction with current preceptors, but 2/3 report drop out in the last year.
- Preceptor faculty development activities are modest.
- Anecdotal reports of problematic preceptors fired by one school then hired by other schools.

Summary

- Community based education is a strategic issue for the state and for all health professions education—both in **numbers** and in **quality**.
- Demand has exploded in NC; supply stable to slightly declining, with many practices not teaching full-time.
- Health professions schools are beginning to see a significant impact on education.
- Trends are accelerating rapidly.

Community Precepting Work Group
Participating Leaders from Diverse Professions and Institutions

Education Representatives

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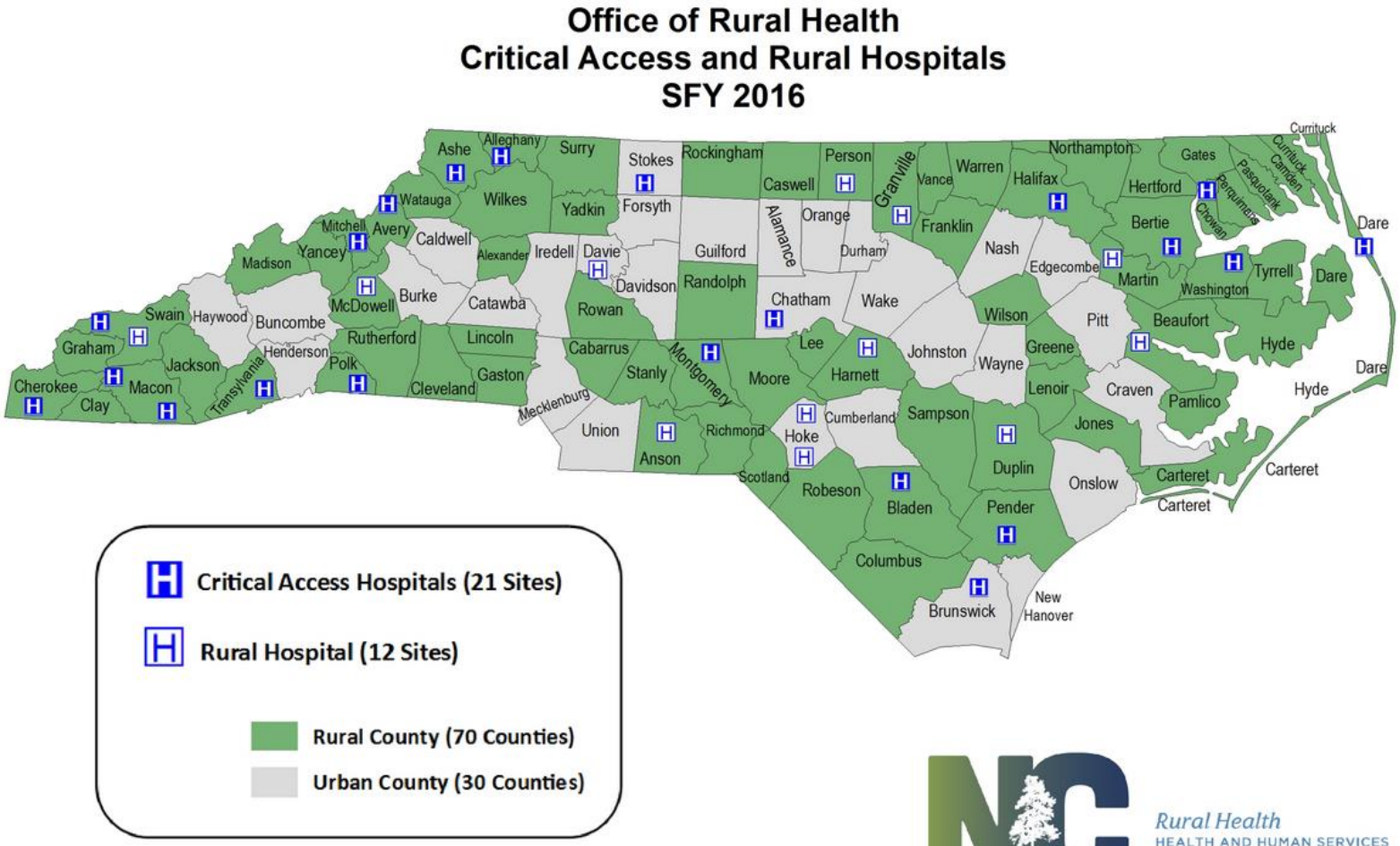
Work Group Recommendations

- Focus was community based precepting, in which clinicians have students in practice settings away from academic centers
- Include all North Carolina public and private health profession education programs, to the extent they contribute to clinicians practicing in North Carolina and to clinician diversity
- Prioritize clinicians working in rural and underserved settings
- Track outcomes and adjust as needed

Focus on Rural Communities



Rural Health
HEALTH AND HUMAN SERVICES

Recommendation I

- 3 year pilot of a preceptor tax credit for community based precepting in rural or underserved communities
- For MD/DOs, PAs, NPs/DNPs, CNMs who precept students from any of those professions and who do not receive funding personally from any other source
- $1000 for each student-month, up to 10 months in a year.
- Faculty must get annual faculty development
- Verified for state by NC AHEC

Recommendation II
A Passport for Health Professional Education

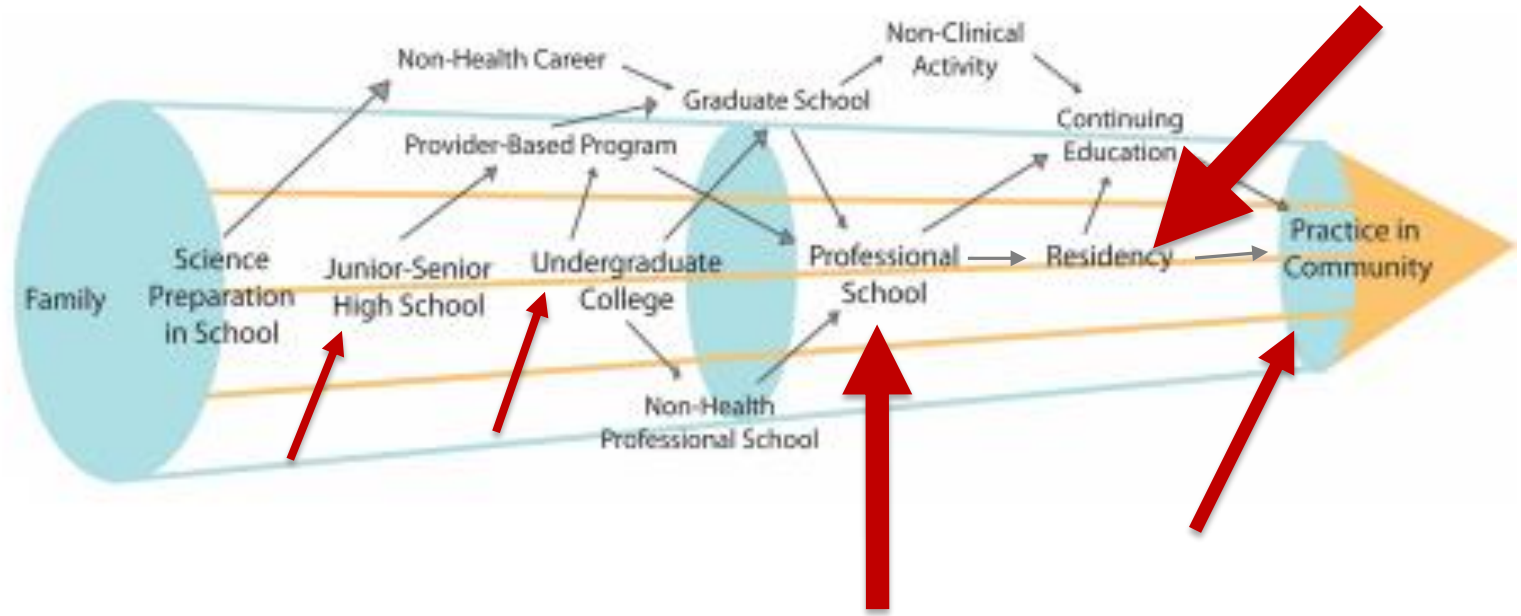
- All NC health professions students, schools, health care institutions
- Passport—Common required immunizations, criminal background check, drug testing
- Common training—HIPPA, Patient Safety—with opportunities for professions and institutions to add what they need uniquely

Recommendation III
Innovation in Community Education

- Shared Faculty Development for Community Educators
- Academy of Community Health Educators
- Certified Teaching Practices with high quality and access of care, teach most of the year, with students from >1 profession.
- Share best practices in adding clinical value and compensation plans that support teaching.

An Overall UNC Strategy for Primary Care and other Community Based Health Professions

Changing Educational Outcomes: Intervening Across the Pipeline

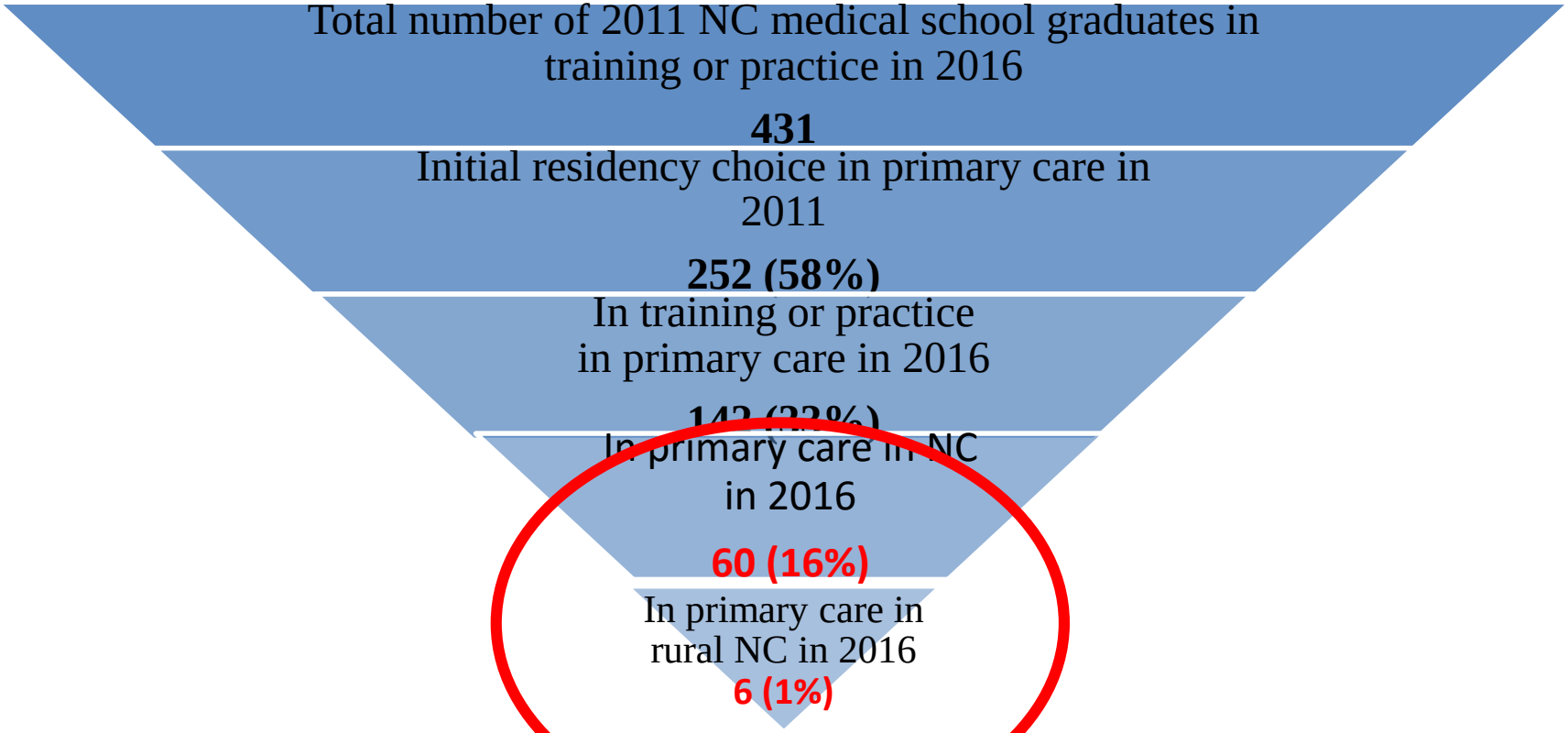


Priorities for Primary Care and Community Health

- Expand Rural Graduate Medical Education, working with DHHS and legislature
- Support rural community preceptors with tax credit, health education passport and support for shared services and innovation
- Track and Report Outcomes Annually
- Adjust as necessary to new professions and settings

ACCOUNTABILITY

Primary Care in NC Rural Areas in 5 Years



Produced by the Program on Health Workforce Research and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
Source: North Carolina Health Professions Data System with data derived from the Association of American Medical Colleges, and the NC Medical Board, 2016.

Rural source: US Census Bureau and Office of Management and Budget, July 2015. "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs.

UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Workforce Outcomes of North Carolina Medical School Graduates: A Report to the Joint Legislative Oversight Committee on Health and Human Services and the Joint Legislative Education Oversight Committee

Julie C. Spero, MSPH and Erin P. Fraher, PhD, MPP January 10, 2018

INTRODUCTION

North Carolina Session Law 2017-57, the Current Operations Appropriations Act of 2017, directed the North Carolina Department of Health and Human Services (DHHS) and The University of North Carolina (UNC) to provide a report on the workforce outcomes of medical school and graduate medical education (GME) programs in North Carolina. The report will be reviewed by subcommittees appointed by the Joint Legislative Oversight Committee on Health and Human Services and the Joint Legislative Education Oversight Committee to assess the degree to which state support of physician training programs is meeting the health care needs of North Carolina's citizens.

The Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at the University of North Carolina at Chapel Hill was asked to provide data for the report. This document focuses on medical school workforce outcomes; a second report summarizes data on the workforce outcomes of graduate medical education (GME or "residency training") programs in North Carolina.

This report responds to the legislation which asked DHHS and UNC to:

1. determine the identity, location, and number of positions for medical school in the state, broken down by location;
2. identify the number of graduates of medical education in the state who are in practice in North Carolina in 2016 in anesthesiology, neurology, neurosurgery, obstetrics and gynecology, primary care, psychiatry, surgery and urology.
3. track the outcomes of graduates of North Carolina medical school in primary care, obstetrics and gynecology, and psychiatry five years after completing medical school.

BACKGROUND

In 1993, the North Carolina General Assembly (S.L. 1993-321) mandated that each of North Carolina's four medical schools develop plans to expand the percent of medical students choosing a primary care residency. The UNC Board of Governors (BoG) was tasked with monitoring and annually reporting the progress of the four schools toward this goal by evaluating the number of State-supported medical graduates going into primary care five years after graduation. The North Carolina AHEC Program, in collaboration with the Program on Health Workforce Research and Policy at the Sheps Center, produces a report to the UNC BoG in October of each year, which is then forwarded to the Fiscal Research Division of the North Carolina General Assembly. Information in this report draws on those previous analyses. We also include additional information as requested in the 2017 legislation.

METHODS

Study Design

The analyses requested by the legislature required two different methodological approaches. We used a ***cross-sectional approach*** to identify the number of graduates of medical schools in the state who were in practice in North Carolina in 2016 in anesthesiology, neurology, neurosurgery, obstetrics and gynecology, primary care, psychiatry, surgery and urology. This analysis reflects a "snapshot" of all physicians in practice in the state in a single year: 2016. To be in active practice in 2016, physicians would have had to finish medical school at a point in time roughly before 2012. Thus, the cross-sectional analysis includes physicians who graduated from medical school any time before 2012.

We used a ***cohort study design*** to determine the workforce outcomes of graduates of the 2008, 2009, 2010, and 2011 medical school classes from ECU, UNC, Wake Forest and Duke. This cohort design allowed us to determine the number and percent of graduates of NC medical schools from those four years who were in practice *in NC five years after their graduation*. This analysis includes the number and proportion in rural counties and in primary care (family medicine, general internal medicine, general pediatrics and general OBGYN).

Data and Analysis

For the ***cross-sectional analyses***, we used 2016 licensure data received from the NC Medical Board and housed by the NC Health Professions Data System (HPDS) at the Cecil G. Sheps Center for Health Services Research. The data include active, licensed physicians with a primary practice address in NC who are not in residency training and are not employed by the federal government as of October 31, 2016. Physician specialty is derived from their self-reported "primary area of practice," the branch of medicine in which the physician predominantly works each day. The primary area of practice may be the same as their specialty (e.g. internal medicine, neurological surgery, or dermatology) but may also correspond to an area of work (e.g. hospitalist, urgent care, or student health). For the purposes of this analysis, we use the terms "primary area of practice" and "specialty" interchangeably.

Physician practice locations were coded to rural/urban status. A physician was defined as working in a rural area if his/her primary practice location was in either a) a non-metropolitan county according to the 2015 Federal Office of Management and Budget (OMB) classification, or b) a metropolitan county in an area with a Rural Urban Commuting Area (RUCA) code[i] of 4 or greater. Physicians with an active practice location in North Carolina were also assigned a "Tier designation." The North Carolina Department of Commerce annually ranks the state's 100 counties based on economic well-being. The 40 most distressed counties are assigned as Tier 1 counties, the next 40 as Tier 2, and the 20 least distressed as Tier 3 counties.

In addition to US medical schools, the Liaison Committee on Medical Education (LCME) accredits medical schools in Puerto Rico and Canada, and all programs are held to the same accreditation standards. In this analysis, physicians trained in Puerto Rico (0.34%, n=85) and Canada (0.61%, n=145) are included with counts of US-trained physicians (USMGs).

The analysis of the percent of graduates from the classes of 1990-2015 in active practice in the 2016 NC workforce used data on graduating class sizes for each year, which were obtained from the registrar's offices at each medical school.

[i] Rural Urban Commuting Area codes and are a widely used method for assigning rural or urban status to a county, ZIP code or cluster of census tracts.

The ***cohort analysis*** relies on data from three different sources. Association of American Medical Colleges (AAMC) data are used to identify the names of graduates from NC medical schools and their residency program locations and specialties. These data are then matched to the AMA physician Masterfile to identify their practice location and specialty five years after graduating from medical school. We merged this file to the NC Medical Board licensure data to determine which physicians were in active practice in North Carolina. We summarized the results of the graduates from the classes of 2008, 2009, 2010 and 2011 and their practice outcomes five years after graduation in 2013, 2014, 2015 and 2016, respectively. We show the number who were in practice *in NC*, the number in practice in NC *in primary care*, and the number in practice in NC in primary care *in a rural area*. Unlike the cross-sectional analyses, the data for the cohort analysis include both physicians who are in active practice as well as physicians still in residency training. The definition of rural/urban is also slightly different, as "rural" is limited to non-metropolitan counties according to the Federal Office of Management and Budget. This slight change in methods is used to keep results of these analyses consistent across previous years.

Timeline for assessing workforce outcomes in the cohort study

Some observers have questioned whether a five-year timeline for tracking medical students is long enough to adequately measure outcomes. As more physicians pursue specialties that require longer training programs and take time out of training to do research or for personal reasons, ten years may be a more appropriate timeline for assessing workforce outcomes.

Findings: Cross-Sectional Analysis

645 students enroll in medical schools in North Carolina annually.

Table 1 shows the incoming class sizes for each of NC's medical schools. UNC has the largest incoming class size (180 students, with plans to expand to 230) and trains medical students at multiple campuses across the state. ECU has the smallest class size with 80 students, with plans to expand to 120. Campbell University, which opened its doors to students in 2013, has the second largest incoming class size in the state, with 150 students. The differences in class sizes are important to keep in mind to assess the relative contributions of each institution to the physician workforce in North Carolina.

Table 1: Medical School First-Year Class Sizes, North Carolina, 2017

Medical School	Location	Incoming Class Size
Campbell University Jerry M. Wallace School of Osteopathic Medicine	Buies Creek, Harnett County	150
Duke University School of Medicine	Durham, Durham County	115
East Carolina University Brody School of Medicine	Greenville, Pitt County	80
University of North Carolina-Chapel Hill School of Medicine	Chapel Hill, Orange County Asheville Campus, Buncombe County Charlotte Campus, Mecklenburg County Wilmington Campus, New Hanover County	180
Wake Forest University School of Medicine	Winston-Salem, Forsyth County	120
Total First Year Medical Students in NC		**645**

Roughly a quarter of NC physicians completed medical school in-state

In 2016, slightly less than one quarter of physicians practicing the North Carolina graduated from a NC medical school (23.4%, n=5,592) (**Table 2**). The majority (60.5%, n=14,441) of NC physicians attended medical school in a US state other than North Carolina. The remaining 15% (n=3,609) of NC's physician workforce are International Medical Graduates (IMGs) who completed medical school outside the United States. IMGs must complete residency training in the US to obtain a US medical license.

Table 2: Active, Licensed North Carolina Physicians by Medical School Location, 2016

	Number	Percent
North Carolina (NCMGs)	5,592	23.4%
Duke University School of Medicine	*795*	*3.3%*
East Carolina University Brody School of Medicine	*1,073*	*4.5%*
University of North Carolina at Chapel Hill School of Medicine	*2,383*	*10.0%*
Wake Forest University School of Medicine	*1,341*	*5.6%*
Other US States, Canada, Puerto Rico (USMGs)	14,668	61.5%
Foreign Countries (IMGs)	3,609	15.1%
Total	**23,869**	**100.0%**

[Data are derived from the North Carolina Board of Medicine and include active, licensed physicians in practice in North Carolina as of October 31, 2016 who are not residents-in-training and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

The proportion of the NC workforce comprised of physicians who completed medical school in-state has declined over time, while the proportion of IMGs has nearly doubled.

The proportion of physicians in the NC workforce who completed medical school in other US states, Canada, or Puerto Rico has remained stable over the past 26 years, while physicians who graduated from a NC medical school has declined from roughly one-third to about one-quarter of NC's physician workforce (**Figure 1**). The proportion of International Medical Graduates in NC's workforce nearly doubled during that period, from 8% of the workforce in 1990 to 15% in 2016. Between 1990 and 2016, IMGs grew by 339%, far outpacing the growth of USMGs (126%) and NCMGs (66%). For context, NC's population grew 53.1% during that period.[1,2]

NC medical school graduates are relatively evenly proportioned at roughly 23% of the workforce across all three economic tiers (**Figure 2**). USMGs are the bulk of the NC physician workforce, and are numerically and proportionally most represented in every tier. While the proportion of USMGs is greatest (64%, n= 10,818) in the least economically distressed Tier 3 counties, USMGs make up a comparatively smaller percentage of the workforce in Tier 2 (56%, n=2,981) and Tier 1 (54%, n=869) counties. IMGs fill in the gaps in those counties. More than one in five physicians in Tier 1 and Tier 2 counties went to medical school outside of the United States. In Tier 1 counties, the least economically distressed, IMGs are just 13% (n=2,128) of the workforce.

Figure 1: Active Licensed NC Physicians by Medical School Location, 1990-2016

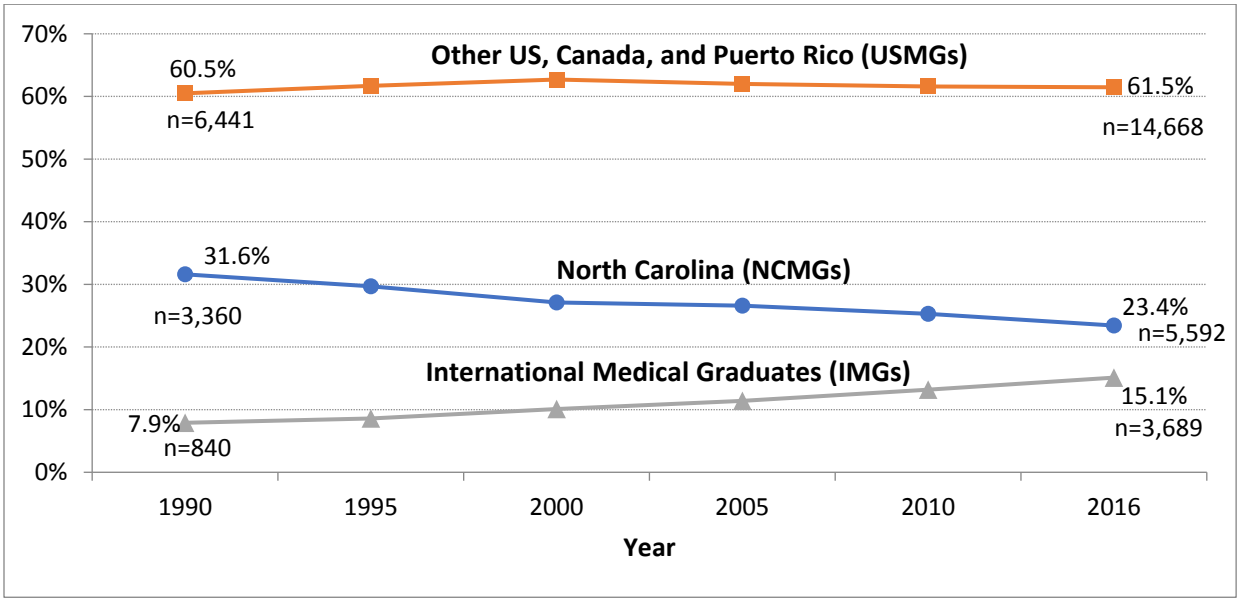


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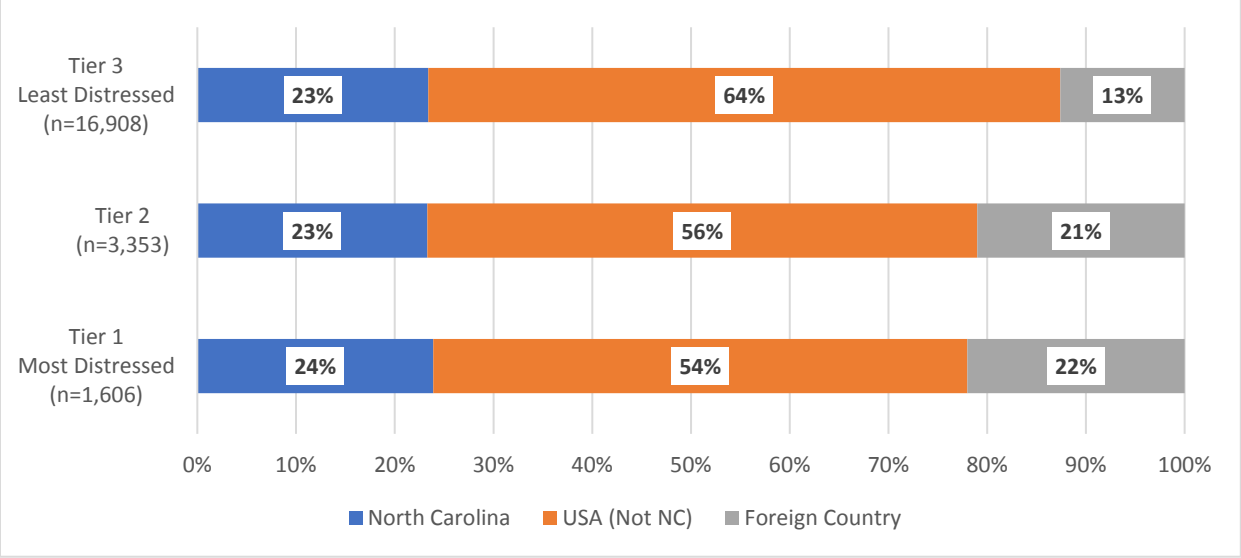
Figure 2: NC Physician Workforce by NC Economic Tier of Practice County and Medical School Location, 2016

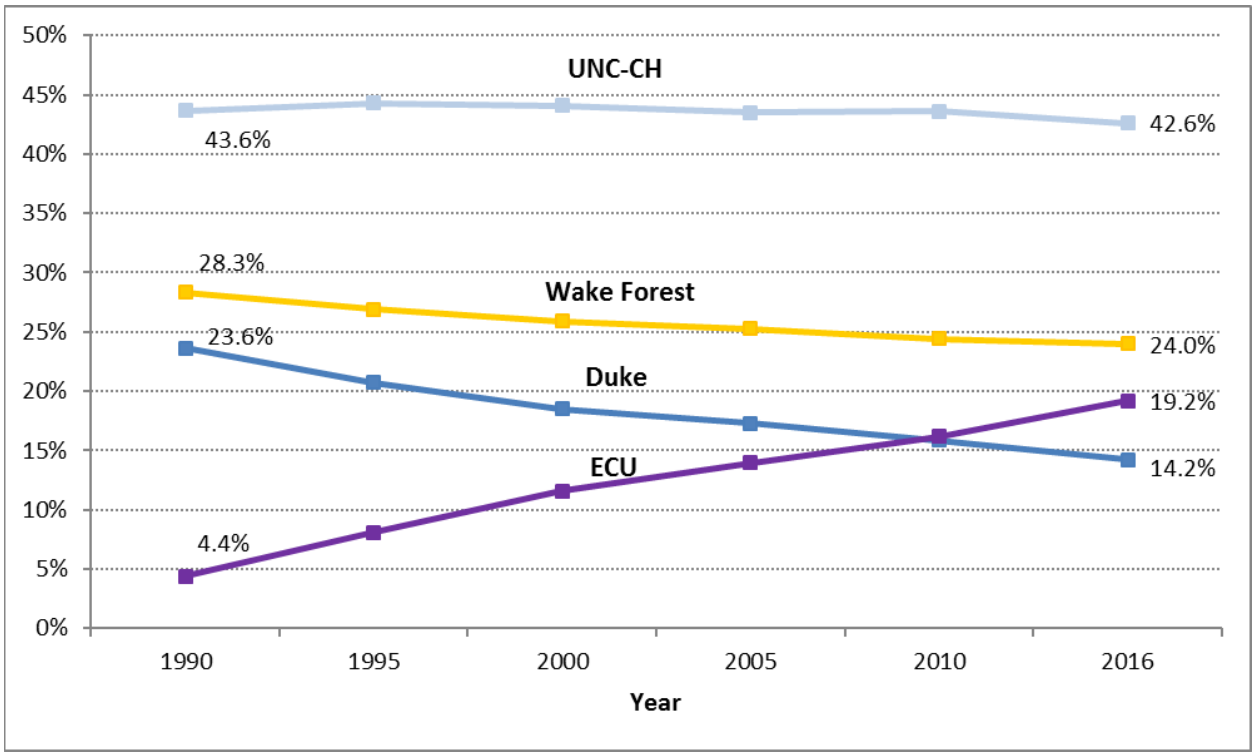


[Data are derived from the North Carolina Board of Medicine and include active, licensed physicians in practice in North Carolina as of October 31, 2016 who are not residents-in-training and are not employed by the Federal government. Data on 2016 NC economic tiers obtained from NC Department of Commerce. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

UNC has consistently contributed largest percent of NC-educated physicians to workforce

In 2016, 5,592 physicians in the NC workforce had attended one of NC's four medical schools. (Campbell's inaugural class graduated in 2017.) Of those who graduated from an NC medical school, the proportion of those graduating from UNC has remained stable at roughly 43% since 1990 (**Figure 3**). The proportion of graduates at the state's two private schools, Wake Forest and Duke, has declined over time, while the proportion trained at ECU School of Medicine has increased from 4.4% to 19.2%. These data point to the trend of graduates of NC's public medical schools more often practicing in state relative to graduates of private medical schools. This trend is particularly stark when comparing graduates from ECU and Duke.

Figure 3: Active Licensed NC Educated Physicians by North Carolina Medical School Location, 1990-2016



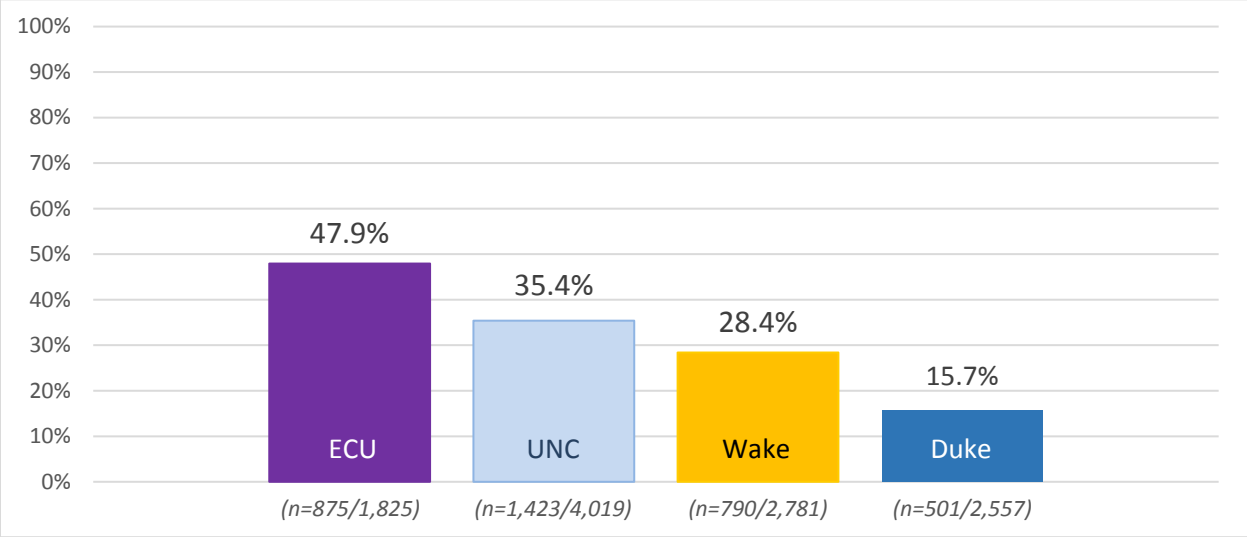
[Data are derived from the North Carolina Board of Medicine and include active, licensed physicians in practice in North Carolina as of October 31 of each year who graduated from an NC medical school, are not residents-in-training, and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

Consistent with its mission, a higher proportion of ECU's graduates practice in-state compared to other NC medical schools

Nearly half (48%, n=875 of 1,825) of the physicians who graduated from ECU between 1990-2015 were in active practice in NC in 2016, compared to about one-third (35%, n=1,423 of 4,109) of UNC graduates, 28% (n=790) of Wake Forest graduates, and 16% (n=401) of Duke graduates (**Figure 4**). These data provide a cross-sectional snapshot of physicians in active practice in 2016. The data include physicians who graduated over a 25-year period. Because all these graduating classes are pooled, we do not know how retention varies by graduating cohort; earlier or later medical school cohorts may be more or less likely to be retained in practice in North Carolina.

The overall trends in retention of medical school graduates in North Carolina are consistent with each school's stated mission. ECU has been the most successful of the four schools in retaining its graduates in North Carolina. ECU's legislatively mandated mission is to increase the supply of primary care physicians to serve NC and only North Carolina applicants are considered for admission.[3,4] Part of the UNC mission is to improve the health and wellbeing of North Carolinians, but its mission is broader and includes a focus on research as well as attention to national and international health issues. As Table 1 and Figure 2 show, UNC graduates still make up a significantly higher proportion of the NC physician workforce compared to other medical schools because UNC produces more graduates annually than other programs.[5] In 2016, 1,423 UNC graduates were in practice in NC, which is 1.6 times greater than the number of ECU graduates (n=875), 1.8 times greater than the number of Wake Forest graduates (n=790), and 3.5 times greater than the number of Duke graduates (n=401). Wake Forest's mission statement is linked to Wake Forest Baptist Medical Center, and includes language about "serving as the premier health system in our region."[6] This regional focus is in line with Wake Forest's relatively higher retention of graduates in state compared to Duke, the other private institution. Duke Health's vision statement says Duke will "build healthy communities" and "connect with the world to improve health globally," but neither the vision statement nor the school of medicine's values statement make specific mention of North Carolina.[7] Duke is more outwardly focused than the public medical schools, and retains the fewest graduates in state.

Figure 4: Percent of Graduates from the Classes of 1990-2015 in Active Practice in 2016 NC Workforce

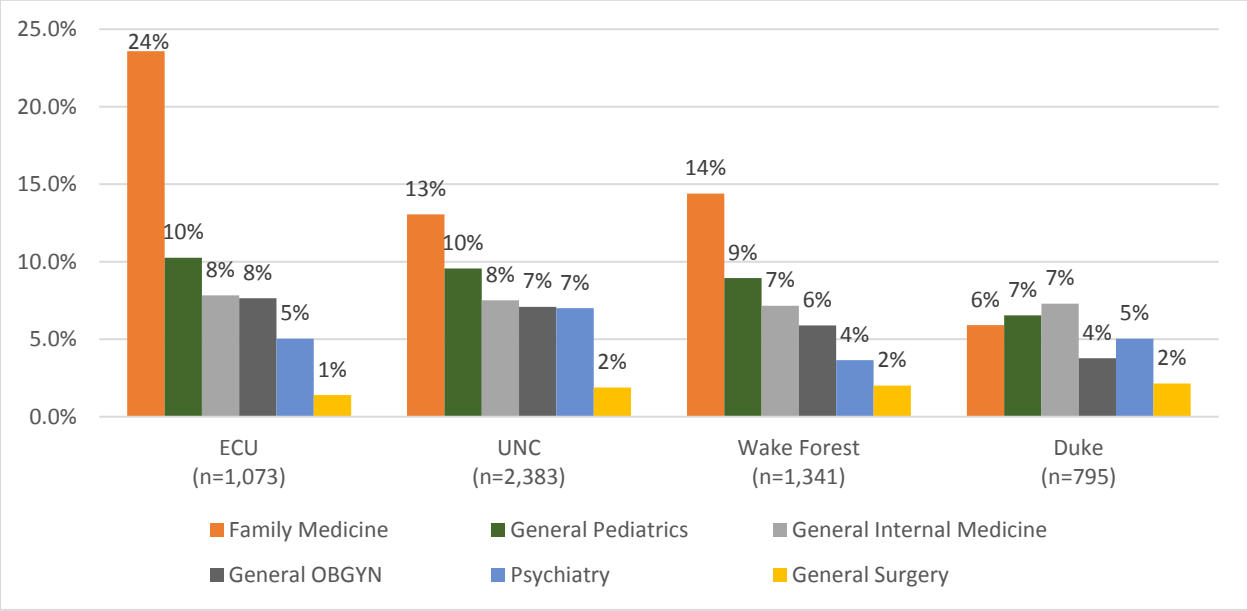


[Data are derived from the North Carolina Board of Medicine and include active, licensed physicians in practice in North Carolina as of October 31, 2016 who graduated from an NC medical school between 1990 and 2015, are not residents-in-training, and are not employed by the Federal government. Data on number of graduates from 1990-2015 obtained from the registrar's office of each medical school. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

Consistent with its mission, ECU produces proportionally more primary care physicians who practice in NC than other NC medical schools do

Figure 5 shows that of the four NC medical schools, ECU produces proportionally more primary care physicians who practice in NC. Nearly one-quarter of ECU graduates practicing in NC are in family medicine. The specialty distribution of UNC and Wake Forest medical school graduates is similar, except that a higher percentage (7%) of UNC graduates in the NC workforce are psychiatrists. Of the 310 psychiatrists in the state who graduated from an NC medical school, 54% (n=167) are UNC graduates. Of the 104 general surgeons who graduated from an NC medical school, 43% (n=45) are UNC graduates. As expected from its mission, Duke produces proportionately fewer primary care physicians compared to the state's other medical schools.

Figure 5: Specialty of Active Physicians in North Carolina Workforce in 2016 by Medical School



[Data are derived from the North Carolina Board of Medicine and include active, licensed physicians in practice in North Carolina as of October 31, 2016 who graduated from an NC medical school, are not residents-in-training, and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

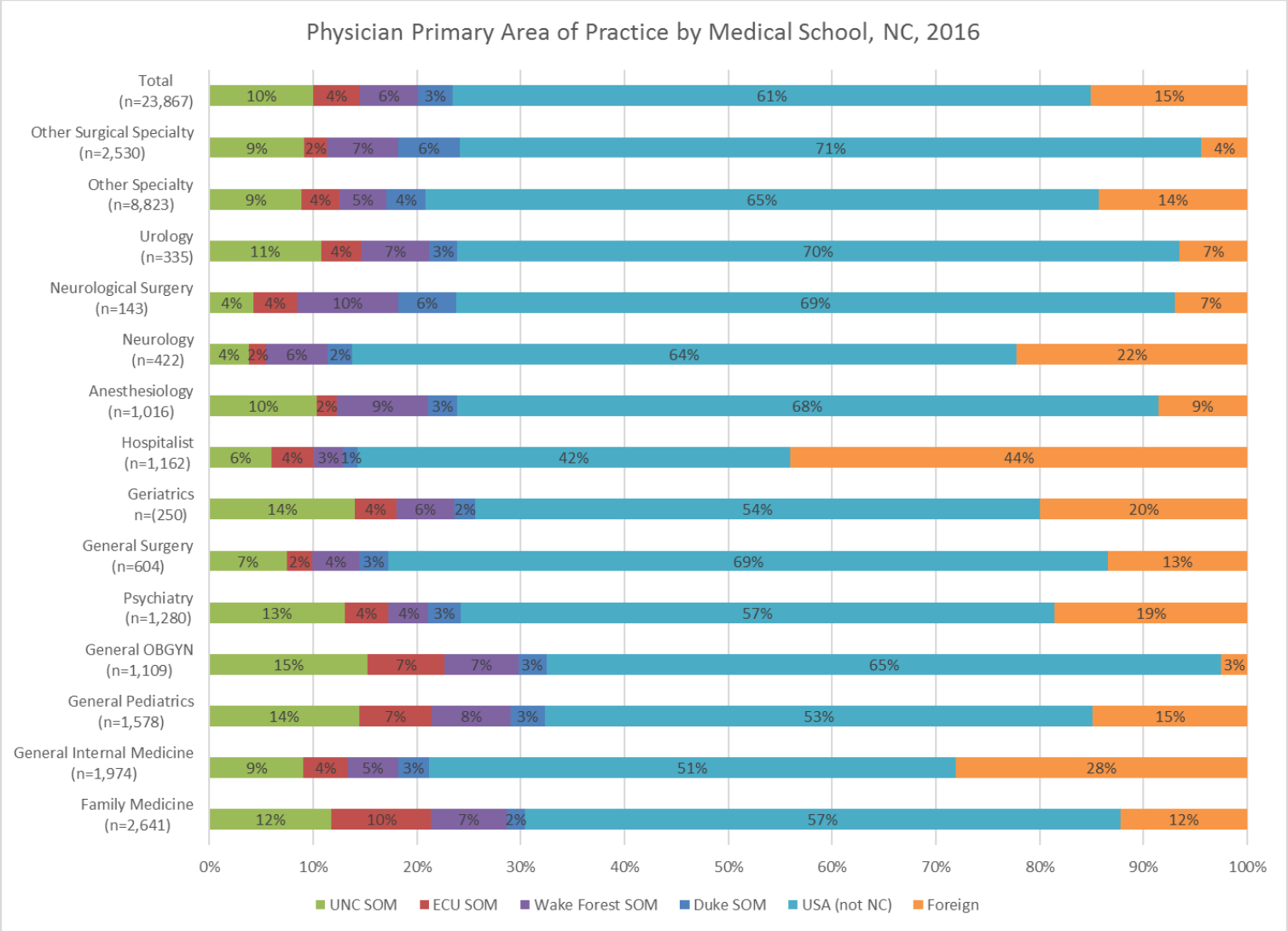
Together, NC medical school graduates comprise about one-third of the workforce in key primary care and high need specialties

The contribution of medical schools to different physician specialties varies. Half (49%, n=529) of ECU grads practicing in NC are in a primary care specialty (family medicine, general internal medicine, general pediatrics, or OBGYN), a quarter of whom practice in family medicine (24%, n=253). Roughly a third of UNC and Wake Forest graduates in NC practice in primary care (37%, n=887 and 36%, n=488, respectively), while just a quarter of Duke graduates in NC practice in primary care (24%, n=187).

Although most physicians across all specialties were trained at medical schools outside the state (**Figure 6**, consistent with Figure 1), NC medical school graduates comprise close to one-third of the workforce in key primary care and high need specialties, including 30% of family medicine physicians (n=804/2,641), 32% of general pediatricians (n=510/1,578), and 28% of pediatric psychiatrists (n=58/204).

IMGs are 15% of NC's workforce, but are not distributed evenly across specialties. Some specialties rely heavily on IMGs; others have few IMGs. For example, 44% of hospitalists (n=512/1,162) and 28% of general internists (n=554/1,974) are IMGs. IMGs make up only 9% of anesthesiologists, 7% of urologists and neurologic surgeons, and 4% of other surgical specialists.

Figure 6: Medical School of Active Physicians in North Carolina Workforce in 2016, by Specialty



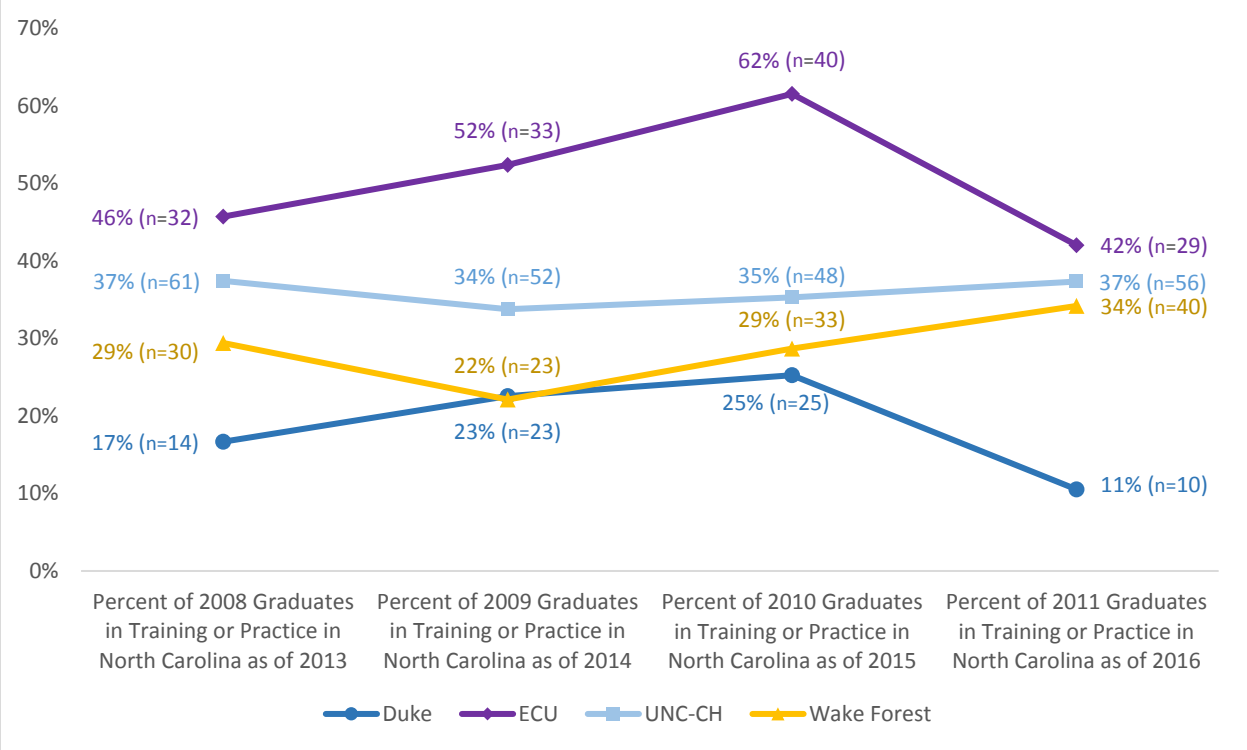
[Data are derived from the North Carolina Board of Medicine and include active, licensed physicians in practice in North Carolina as of October 31, 2016 who graduated from an NC medical school, are not residents-in-training, and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

Findings: Cohort Analysis

In this section, we change perspective from examining the contributions of ECU, UNC, Wake Forest and Duke to the existing physician workforce in NC in 2016 to the workforce outcomes of individual cohorts of graduates from these schools in 2008, 2009, 2010, and 2011.

Figure 7 shows the variability year-to-year in the percent of medical school graduates from each medical school that are in practice in the state five years after graduation. Across these four cohorts, public medical schools had higher retention rates than private medical schools. ECU has consistently had a greater percentage of graduates in practice in NC five years post-graduation than the other NC medical schools.

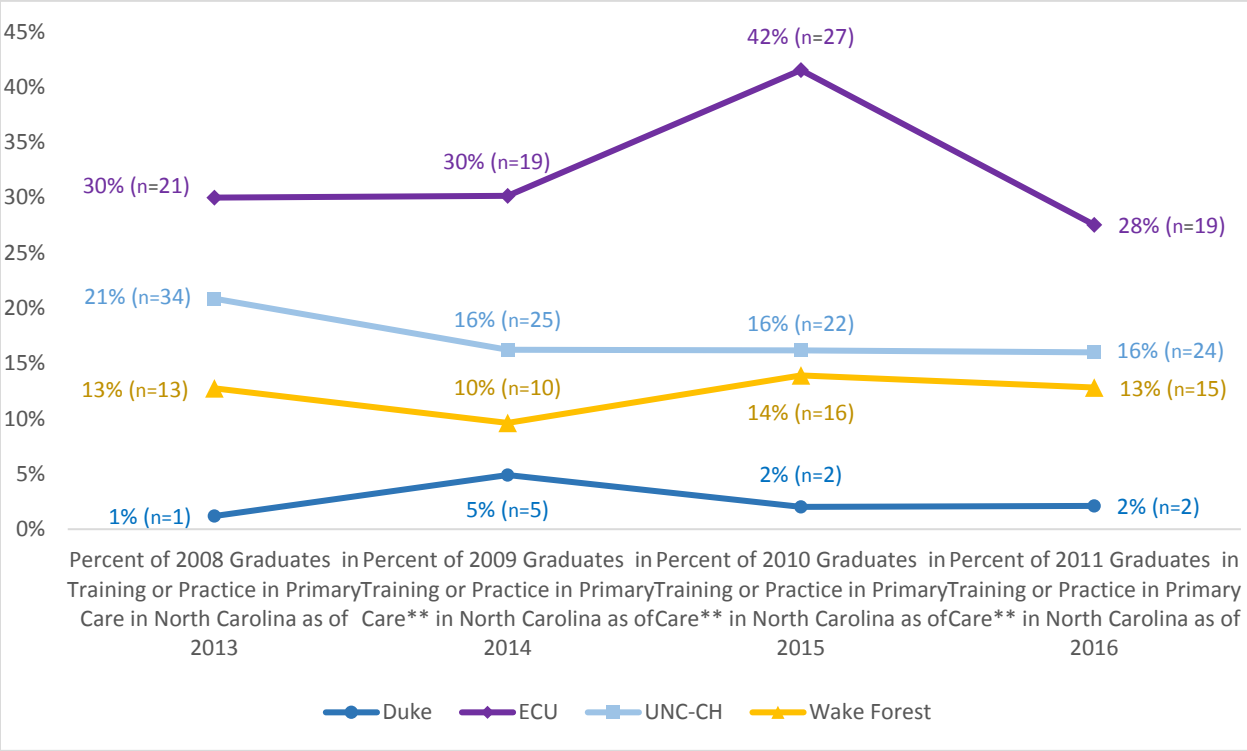
Figure 7: Percent of NC Medical School Graduates Retained In North Carolina Five Years after Graduating



[Data are derived from the AAMC include graduates of the classes of 2008, 2009, 2010, or 2011 from NC medical schools in NC and are matched to data derived from the North Carolina Board of Medicine. NCMB data include active, licensed physicians in practice in North Carolina as of October 31 in 2013, 2014, 2015, or 2016, respectively who graduated from an NC medical school, are not residents-in-training, and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

Figure 8 shows the percent of medical school graduates from each medical school in 2008, 2009, 2010, and 2011 that were retained in North Carolina *in primary care* five years after graduation (in 2013, 2014, 2015 and 2016 respectively). Consistent with other data in this report, ECU retained more graduates in primary care in NC than other schools, followed by UNC.

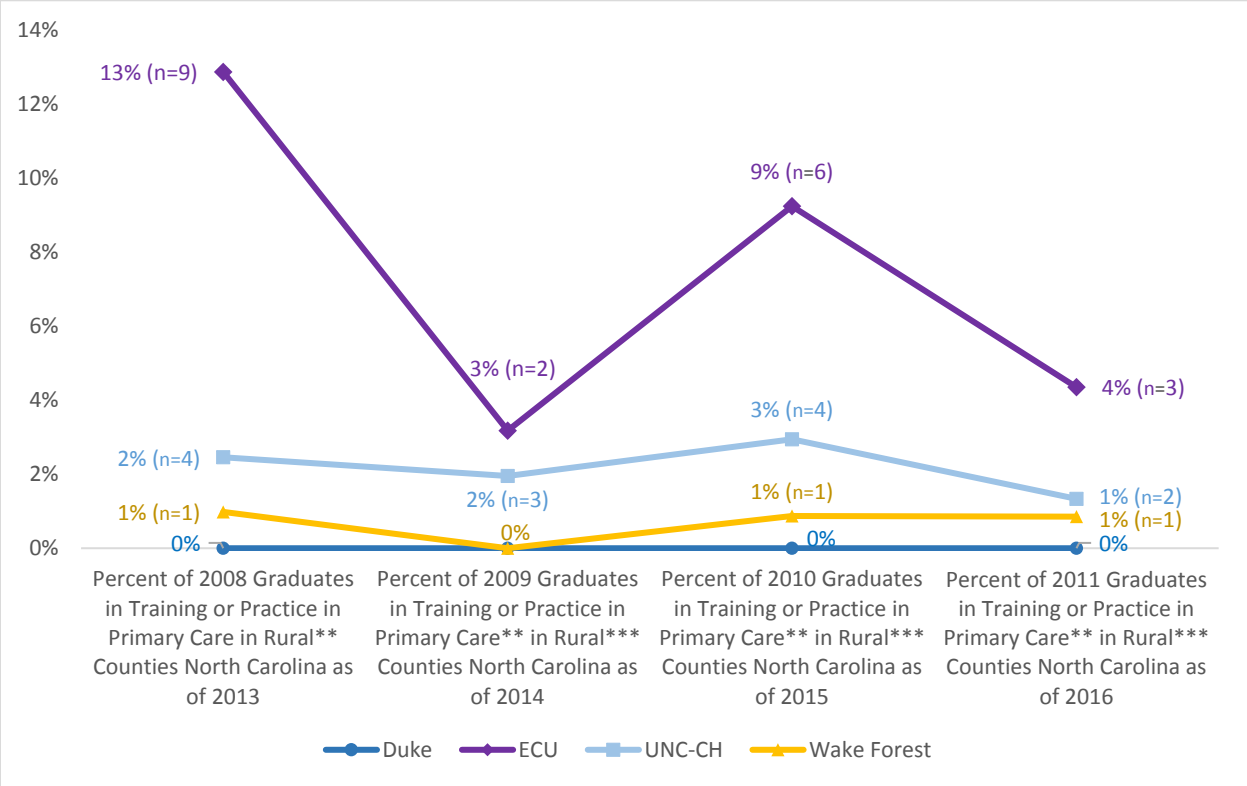
Figure 8: Percent of NC Medical School Graduates Retained In North Carolina in Primary Care Five Years after Graduating



[Notes: Primary care includes family medicine, general internal medicine, general pediatrics, and obstetrics & gynecology. Data are derived from the AAMC include graduates of the classes of 2008, 2009, 2010, or 2011 from NC medical schools in NC and are matched to data derived from the North Carolina Board of Medicine. NCMB data include active, licensed physicians in practice in North Carolina as of October 31 in 2013, 2014, 2015, or 2016, respectively who graduated from an NC medical school, are not residents-in-training, and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

Figure 9 shows the percent of medical school graduates from each medical school 2008, 2009, 2010, and 2011 that are retained in North Carolina *in primary care in rural counties* five years after graduation. The striking finding from Figure 8 is that the percent of medical students who end up practicing primary care in rural counties in North Carolina is small, ranging from a high of 4% of ECU graduates to none of the Duke graduates for the 2011 cohort. Despite year-to-year variability in the data, at five years post-graduation, ECU had more graduates practice in primary care in rural areas than other programs. UNC has remained around 2%, Wake Forest at 1%, and Duke has not had any graduates in rural primary care from the 2008, 2009, 2010, and 2011 cohorts.

Figure 9: Percent of NC Medical School Graduates Retained In North Carolina in Primary Care in a Rural County Five Years after Graduating



[Notes: Primary care includes family medicine, general internal medicine, general pediatrics, and obstetrics & gynecology. "Rural" is defined based on Federal Office of Management and Budget Core-Based Statistical Area (CBSA) definitions, and includes counties that are either micropolitan or outside of CBSAs. Data are derived from the AAMC include graduates of the classes of 2008, 2009, 2010, or 2011 from NC medical schools in NC and are matched to data derived from the North Carolina Board of Medicine. NCMB data include active, licensed physicians in practice in North Carolina as of October 31 in 2013, 2014, 2015, or 2016, respectively who graduated from an NC medical school, are not residents-in-training, and are not employed by the Federal government. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.]

Conclusion

A declining proportion of the NC physician workforce is made up of physicians who graduated from a NC medical school. The percentage of the workforce that trained in countries other than the US, Canada, or Puerto Rico nearly doubled from 8% to 15% of the workforce between 1990 and 2016. UNC graduates make up the largest proportion of NC-educated physicians, representing 43% of NC medical school graduates in the state's workforce. The number of ECU graduates has grown rapidly in the NC physician workforce. In 1990, ECU graduates represented 4.4% of all NC medical school graduates in the state's workforce, and that percent increased to 19.2% in 2016. Consistent with its mission, ECU graduates are more likely than other NC medical school graduates to remain in-state, work in primary care and in rural communities.

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FOR HEALTH SERVICES RESEARCH

The Workforce Outcomes of Physicians Completing Residency Programs in North Carolina

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INTRODUCTION

North Carolina Session Law 2017-57, the Current Operations Appropriations Act of 2017, directed the North Carolina Department of Health and Human Services (DHHS) and The University of North Carolina (UNC) to provide a report on the workforce outcomes of medical school and graduate medical education (GME) programs in North Carolina. The report will be reviewed by subcommittees appointed by the Joint Legislative Oversight Committee on Health and Human Services and the Joint Legislative Education Oversight Committee to assess the degree to which state support of physician training programs meet the health care needs of North Carolina's citizens.

The Program on Health Workforce Research and Policy at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill was asked to provide data for the report. This document focuses on graduate medical education (GME or "residency training") outcomes; a separate report addresses medical school outcomes in North Carolina.

This report responds to the legislation which asked DHHS and UNC to:

1. determine the identity, location, and number of positions for graduate medical education training programs in the state, broken down by location;
2. identify the number of graduates from GME programs in the state that are in practice in North Carolina in 2016 in anesthesiology, neurology, neurosurgery, obstetrics and gynecology, primary care, psychiatry, surgery and urology;
3. track the outcomes of graduates of North Carolina residency training programs in primary care, obstetrics and gynecology, and psychiatry five years after completing residency training.

BACKGROUND

Graduate medical education (GME), commonly referred to as "medical residency" or "residency," occurs after medical school. After graduating from medical school, physicians complete a residency to gain skills and competencies in a particular branch of medicine, for example, family medicine, obstetrics and gynecology, or general surgery. Both allopathic (MD) and osteopathic (DO) physicians must complete medical residencies to become fully licensed by the NC Medical Board. The length of a medical residency depends on the specialty, with most residencies lasting between three to seven years.

The majority of public funding for residencies in NC and the nation comes from Medicare. Other funding sources include the Veterans Administration, Medicaid, state appropriations, and hospitals. North Carolina's Medicaid program provides a greater amount of GME funding than most other states. In 2012, North Carolina ranked fifth among all 50 states and DC in the amount of GME funding provided by Medicaid, with a total of $116 million in GME support.[1] During the 2015 legislative session, the NC General Assembly reduced the state's contribution toward Medicaid GME funding (NC Session Law 2015-241, SECTION 12H.23.(a), but language in the Current Operations Appropriations Act of 2017 noted the intent of the General Assembly to continue to appropriate funds for GME as part of Medicaid transformation (NC Session Law 2017-57, SECTION 11H.13.(b)). Despite the relatively high investment of state funds in GME in NC, there are no accountability measures attached to these monies. The lack of transparency and accountability for public investments in GME is not unique to North Carolina; it has been identified as a major flaw in the system by numerous reports.[2,3] Without accountability for funds, North Carolina and the nation are unable to target GME investments to ensure the training pipeline produces the workforce necessary to meet population health needs.

Prior efforts evaluating the workforce outcomes of residency programs reported results at the institution level, rather than the program level.[4] This report builds on prior work conducted by Sheps Center researchers, including two national studies of state level GME reform focusing on Medicaid GME,[5,6] a report on GME tracking efforts in NC,[7] and a study of the possible effects of expanding or reallocating GME positions on the supply of physicians.[8]

METHODS

Overview of Study Design

The information requested by the legislature required two different methodological approaches. A cross-sectional approach was used to determine the identity, location, and number of positions in graduate medical education training programs in the state, and identify the number of graduates from GME programs in the state that were in practice in North Carolina in 2016. A cohort approach was used to track the outcomes of graduates of North Carolina residency training programs five years after completing residency training.

Cross-Sectional Approach

Using a ***cross-sectional approach***, we identified the number of graduates from NC GME programs that were in active practice in North Carolina in 2016 in family medicine, general internal medicine, obstetrics and gynecology, general pediatrics, general surgery, anesthesiology, neurology, neurological surgery, psychiatry, pediatric psychiatry, addiction psychiatry, geriatrics, urology, urgent care, and hospitalist practice in rural and urban counties of the state. These data are derived from the NC Medical Board's annual licensure file. This analysis reflects a "snapshot" of all physicians in practice in the state in a single year (2016). Because the data are captured in a single year, they include residents who may have completed training as recently as the prior year or decades earlier. This study also includes data on the total number of residents in training in NC residency programs in 2017. These data were obtained directly from residency institutions across the state.

Using a ***cohort study design***, we assessed the number and percent of residency program graduates who completed training in 2008, 2009, 2010, and 2011 who were in practice *in NC and in rural areas five years after graduation*. We also examined the number and percent of physicians who completed

residency training in NC that were in practice in anesthesiology, neurology, neurological surgery, obstetrics and gynecology, family medicine, general internal medicine, internal medicine/pediatrics, general pediatrics, psychiatry, surgery, and urology five years after completing training. These specialties were identified by the legislature as experiencing "a shortage" (NC Session Law 2017-57, SECTION 11J.2.(a)(3)).

Data and Analysis

Data on the number of residents in each program were collected by contracting the residency institutions directly. The data include residents and fellows in training as of October 2017. For the osteopathic medical residencies affiliated with Campbell University School of Osteopathic Medicine (CUSOM) (Campbell University, Cape Fear Valley Medical Center, Harnett Health, Sampson Regional Medical Center, and Southeastern Health) we obtained information directly from CUSOM office of post-graduate affairs.

The number of graduates of NC residency institutions in practice in the state by primary area of practice was derived from the NC Medical Board's annual licensure file maintained in the NC Health Professions Data System (HPDS). The data include active, licensed physicians with a primary practice address in NC who are not in residency training and are not employed by the federal government as of October 31, 2016. Primary area of practice is self-reported and may be the same as the physician's specialty (e.g. internal medicine, neurological surgery, or dermatology) but may also correspond to the physician's area of work (e.g. hospitalist, urgent care, or student health). For the purposes of this analysis, we use the terms "primary area of practice" and "specialty" interchangeably. Physicians were coded as practicing in a rural area if the primary practice location is in either a) a non-metropolitan county according to the 2015 federal Office of Management and Budget (OMB) classification, or b) a metropolitan county in an area with a Rural Urban Community Area (RUCA) code of 4 or greater.

To evaluate return on investment in terms of residency programs' contributions to the NC workforce, we developed a methodology to track annual cohorts of NC GME graduates in active practice in the state five years after graduation. Data were merged from three different sources to create the analytic datasets for the cohort analysis, which tracked graduates from NC residency programs in 2008, 2009, 2010, and 2011 graduating cohorts. To identify the graduates from NC GME programs in each year, we obtained National Graduate Medical Education Census (GMETrack) data, housed at the Association of American Medical Colleges (AAMC). GMETrack includes a survey of residents on duty in December of each year in programs accredited by the Accreditation Council for Graduate Medical Education.[9] GMETrack is called a "census" but the data are survey data. Most, but not all, GME programs complete the survey, and it is the best-known data source on GME programs (Personal Communication, Karen Jones, Senior Data Analyst, AAMC, 9 Jan 2017). Traditionally, the data have included residents in ACGME and ACGME/AOA jointly accredited programs. The data have excluded the ~5% residents in AOA only programs. This will change in the future with the "All-in" policy.

GMETrack data were used to identify the names of GME graduates from residency programs in NC in 2008, 2009, 2010, and 2011. These data were merged with licensure data from 2013, 2014, 2015 and 2016 to determine the workforce outcomes of GME program graduates five years after completing training. These data were merged with two additional files. First, a list of ACGME programs and the cities in which they were located, since the GMETrack data did not initially include residency

institution city.[i] Second, OMB county status definitions and RUCAs, which we used to classify primary practice locations as rural or urban.

Data were analyzed at the residency program level to determine outcomes five years later in terms of practice in NC, practice in rural NC, and practice in a generalist specialty (e.g., general pediatrics vs. sub-specialty pediatrics). Specifically, we evaluated the workforce outcomes of graduates of North Carolina residency training programs in anesthesiology, neurology, neurosurgery, obstetrics and gynecology, primary care, psychiatry, surgery and urology in 2008, 2009, 2010, and 2011, including the number and percent retained in North Carolina. Because many residency programs have only a few graduates each year, outcomes for multiple years were combined to increase the sample size and "smooth" the data. This analysis generated data that indicates, for each residency program in NC, the number (and percent) of residency program graduates that are in practice in NC.

FINDINGS OF CROSS-SECTIONAL ANALYSIS:

How many residents do we have in NC and where are they training?

Table 1 *(condensed)* shows the number residents by institution, type of program (MD or DO) and location in the state. There were 3,774 residents or fellows in training in NC in 2017. The vast majority (95%) of residents in training in NC are in MD programs but 5% are in DO programs. **Table 1 in the appendix** details the numbers of residents in each training program and specialty by institution.

Table 1 *(Condensed)*. Number of Residents and Fellows in Training by Sponsor Location, NC, 2017

Institution Name	Location	DO or MD	Number of Residents and Fellows
Cabarrus Family Medicine	Concord	MD	25
Campbell University	Buies Creek	MD	2
Cape Fear Valley Medical Center (Campbell Affiliated)	Fayetteville	DO	32
Carolinas HealthCare System Blue Ridge	Morganton	DO	35
Carolinas Medical Center	Charlotte	MD	317
Cone Health	Greensboro	MD	48
Duke University Medical Center	Durham	MD	1,038
Harnett Health (Campbell Affiliated)	Dunn	DO	23
MAHEC/Mission Health System	Asheville	MD	66
MAHEC/Mission Health System	Henderson	MD	13
Novant Health	Cornelius	MD	12
Sampson Regional Medical Center (Campbell Affiliated)	Clinton	DO	19
South East AHEC/ New Hanover Regional Medical Center	Wilmington	MD	74
Southeastern Health (Campbell Affiliated)	Lumberton	DO	78
Southern Regional AHEC	Fayetteville	MD	24
UNC Health Care	Chapel Hill	MD	856
Vidant Health	Greenville	MD	398
Wake Forest Baptist Medical Center	Winston-Salem	MD	714
Total			**3,774**

Source: Data obtained from the respective residency programs and are based on the institutions' list of include residents and fellows as of October 2017.

[i] Accreditation Council for Graduate Medical Education Public Advanced Program Search Tool. Accessed October 15, 2017 at: https://apps.acgme.org/ads/Public/Programs/Search?stateId=34&specialtyId=&city=

The Current NC Workforce: Where Did They Train?

The majority of physicians in the NC workforce completed residency training outside the state. 16% of physicians who completed residency training out-of-state practice in rural areas compared to 11% of NC-trained physicians.

Table 2 in the appendix shows in greater detail where the current North Carolina physician workforce completed training and, based on where they completed training and their specialty, the number and percent who are in rural counties in the state. New Hanover Regional Medical Center had the largest percent of residents in practice in rural areas (28%, or 50 of 177 residents) and a relatively high proportion of physicians in family medicine, OB/GYN and surgery in rural areas compared to other training programs. But New Hanover is among the smaller residency training programs in NC.

Vidant Health, one of the larger residency programs in the state, consistently rank at or near the top of in terms of the proportion of their residents practicing in rural areas. Compared to other programs in North Carolina,

- 30% of Vidant's family medicine residents (45 of 149 residents) are in rural areas compared to an average 17% for all NC residency training programs
- 26% of Vidant's internal medicine residents (21 of 80 residents) are in rural areas compared to an average to 12% for all NC residency training programs
- 28% of Vidant's pediatrics residents (23 of 81 residents) are in rural areas compared to an average 10% for all NC residency training programs
- 33% of Vidant's obstetrics and gynecology residents (15 of 46 residents) are in rural areas compared to an average 16% for all NC residency training programs
- 41% of Vidant's general surgery residents (7 of 17 residents) are in rural areas compared to an average 26% for all NC residency training programs
- 25% of Vidant's total residents (211 of 859) in rural areas compared to an average 11% for all NC residency training programs

UNC Health Care, the largest psychiatry residency program in the state, has the highest proportion of psychiatry residents practicing in rural areas with 16%, or 30 of 193 residents, in rural counties in North Carolina.

The cross-sectional snapshot in Table 2 of graduates by residency institution in active practice in NC in 2016 does not show the percentage of graduates from each residency institution that were retained in practice in the state. To do this, we would need to use a national data file, such as the American Medical Association Physician Masterfile, which would allow us to identify a denominator of all graduates from a given residency institution that are in practice in the U.S. These data would include physicians who completed residency over an approximately 25-year period. Because all the residency cohorts are pooled, we are unable to determine how retention varies by graduating cohort; earlier or later residency program cohorts may be more or less likely to be retained in practice in North Carolina.

FINDINGS OF COHORT ANALYSIS

How many residents practice in North Carolina and in rural areas five years after graduation? How do these retention rates differ by program and specialty?

Table 3 shows the retention in North Carolina and in rural counties five years after graduation for residents that completed training in 2008, 2009, 2010 or 2011 by specialty. Psychiatry programs had the highest retention in NC and in rural counties with 57.3% of residents remaining in-state and 10.9% going into practice in rural areas. About half (49.6%) of family medicine graduates were retained in-state and nearly 5% practiced in rural counties five years after completing training. Pediatrics and internal medicine programs retained 44.3% and 40.5% in-state but only 1.1% and 1.4% in rural practice respectively. Surgery residency programs had lower retention rates in state, with 33.9% of residents practicing in North Carolina after five years but a relatively high retention rate in rural communities with 4.4% of residents in practice in rural counties. Neurological surgery training programs had the lowest retention rates in the state and in rural counties.

Table 3 *(Condensed)*. Resident Retention Five Years After Graduation for Residents Graduating in 2008, 2009, 2010 or 2011

	Total Number of Residents	Retention of Residents in North Carolina After Five Years		Retention of Residents in Rural North Carolina After Five Years	
		#	%	#	%
Psychiatry	110	63	57.3%	12	10.9%
Internal Medicine/Pediatrics	62	33	53.2%	3	4.8%
Family Medicine	351	174	49.6%	17	4.8%
Pediatrics	262	116	44.3%	3	1.1%
Anesthesiology	152	63	41.4%	5	3.3%
Internal Medicine	662	268	40.5%	9	1.4%
Neurology	46	17	37.0%	3	6.5%
Urology	26	9	34.6%	1	3.8%
Obstetrics and Gynecology	145	50	34.5%	4	2.8%
Surgery	183	62	33.9%	8	4.4%
Neurological Surgery	18	3	16.7%	0	0.0%

Notes: The values in this table are derived from aggregating the workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice. Rural areas are based on 2015 Office of Management and Budget metropolitan status codes and 2010 US Census Bureau Rural-Urban Commuting Area (RUCA) codes. Rural areas are either a) in a nonmetropolitan county or b) in an area within a metropolitan county that has a RUCA code of 4 or greater.

The data in Table 3 show *average* retention rates across all training programs for different specialties. Table 3 in the appendix shows that there is significant variation in retention in North Carolina and in rural areas between training programs with some programs doing considerably better than average. For example, the UNC and Wake Forest psychiatry residency training programs retained nearly 70% of their residents in North Carolina five years after graduation. Vidant Medical Center had a lower retention rate of psychiatrists instate with 50% in practice but a relatively high rural rate with 13% in rural counties. 15% of UNC's of psychiatry residency graduates ended up in practice in rural areas.

In family medicine, the Mountain Area Health Education Center Program (MAHEC) in Asheville retained nearly three-quarters of its residents in state five years after graduation but only 3.2% were in practice in rural counties. Carolinas Medical Center retained 71% of graduates and 6.5% in rural counties. Vidant/East Carolina's family medicine program had lower retention rates in-state with 45% of residents in practice in NC five years after graduation but relatively high retention in rural counties compared to other family medicine programs with 10.5% in rural counties.

In internal medicine, Cone Health retained 65% of residents in state and 3.5% in rural counties which were the highest retention rates among programs. The UNC program retained more than half (51.3%) of its residents in-state and 2.5% in rural areas. Surgery residency programs showed considerable variation. Carolinas Medical Center's and New Hanover Regional Medical Center's surgical residency programs were relatively more successful than other programs, retaining 47% and 42% of residents in state and 18% and 17% of surgery residents in rural counties respectively. UNC's surgery program was also relatively successful, retaining 39.2% of residents in-state and nearly 4% in rural counties five years after graduation.

What percent of residents trained in North Carolina practice in the specialty in which they trained?

Table 4 ***(condensed)*** shows for residents who finished training in 2008, 2009, 2010 or 2011, the number who were retained in North Carolina by specialty and the percent of these NC physicians who remained in general practice five years after completing training. For example, Table 3 shows that of the 351 residents who trained in family medicine over those four years, nearly half, or 174, remained in practice in North Carolina five years after completing training. Table 4 *(condensed)* below shows that of these 174 physicians, 74% remained in practice in family medicine five years later. The remaining 26% reported that they were practicing in urgent care (12 physicians), geriatrics (9 physicians), as hospitalists (7 physicians), sports medicine (6 physicians), emergency medicine (3 physicians), addiction psychiatry (2 physicians) and psychiatry (1 physician).

A smaller percent (16%, n=42) of internal medicine physicians remained in general internal medicine five years after completing training, while another 17% practiced as hospitalists. Of the 116 pediatric residents in practice in the state five years after graduation, 58% were practicing in general pediatrics. About one in three (31%) general surgeons practiced general surgery. Of the 63 psychiatrists in practice in North Carolina five years after completing training, 73% were in general psychiatry and 25% were in child psychiatry. Obstetrics and gynecology has few subspecialties that branch from it and the data in Table 4 show the majority of obstetricians and gynecologists (Ob/Gyn) do not specialize.

Table 4 ***(Condensed).*** **Primary Area of Practice Five Years After Graduation for Residents Graduating in 2008, 2009, 2010 or 2011**

Specialty	Total # in Practice in NC	% in Generalist Practice
Family Medicine	174	74%
Internal Medicine	268	16%
-- Hospitalist	45	17%
General Pediatrics	116	58%
General Surgery	62	31%
General Psychiatry	63	73%
-- Child Psychiatry	16	25%
Ob/Gyn	50	94%

Table 4 in the appendix shows that the number of residents who did not go onto subspecialize but remained in practice in general internal medicine, general pediatrics and general surgery five years after completing training differs considerably between training programs and institutions. Five years after completing training, 40% of residents who trained at Carolinas Medical Center were in practice as general internists compared to residents who completed internal medicine training at Duke and UNC where just 8% and 7% respectively ended up in practice as general internists. Residents from Carolinas Medical Center who completed training in general pediatrics and general surgery were also more likely to remain in generalist practice. Eighty-four percent (84%) of pediatricians were practicing general pediatrics and 63% of surgeons were practicing general surgery five years after completing training.

CONCLUSION

This analysis builds on the work of Chen and colleagues[10] and, to our knowledge, is the first to report the workforce outcomes for all residencies in a state at the residency program level using a cohort approach. Reporting at the program level, rather than the institutional level, shows the high level of variation that exists between programs in the number of residency graduates who ultimately end up in practice in the state, in rural settings, and as generalist physicians.

As state policy makers consider ways to increase the number of physicians practicing in North Carolina by expanding residency training opportunities, it is important to evaluate retention in specialties required to meet North Carolina's health care needs. This requires not only examining retention in North Carolina and in rural areas, but also in specialties in high demand in the state. Physicians are increasingly subspecializing and fewer are practicing in "generalist" specialties such as family medicine, general internal medicine, general pediatrics, general surgery, and general psychiatry. While the state needs subspecialists, maintaining an adequate supply of generalist physicians is necessary to meet demand for primary care, mental health, obstetric care, child health, and general surgery services.

We used a cohort approach for this analysis because the legislation specified that the subcommittees reviewing this report would be charged with developing an evaluation protocol for residency programs. A cohort approach, which evaluates workforce outcomes at regular intervals, allows the state to determine whether changes to GME financing policy influence the state's physician workforce. At present, with only four years of data which were combined due to small numbers at many residency programs, we are unable to determine trends or changes in the data. To see change over time, this project would need to be conducted on an annual basis. This would enable researchers to refine the methodologies used, but will also require an investment of resources due to time and effort required for data collection, management, and analyses. Furthermore, it takes 3-7 years for residents to complete training, and this methodology evaluates practice outcomes at five years post-graduation. In other words, it will take a long time to evaluate the effects of policy changes due to the long training time for physicians.

For this analysis, we were limited to the use of the NC medical board licensure file, a rich source of data, but limited to information on physicians licensed in NC only. To conduct a more extensive cross-sectional study of NC residency program outcomes over the past few decades, we would need to use the American Medical Association physician Masterfile or another data source that contains information on the location of physicians nationwide. This would allow us to determine the number of

graduates of each residency program in the national workforce, which we could then compare to the number of graduates in NC. We were unable to do such an analysis for the present study due to the resources required to obtain the AMA Masterfile, which is costly, and to develop a data use agreement with the AMA.

Even with these methodological limitations, this study represents an important first step in helping North Carolina evaluate the degree to which different training programs and institutions are producing the workforce required to meet the needs of the state.

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Appendix, Table 1. Number of Residents in NC Residency Programs, by Location, 2017

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Cabarrus Family Medicine	Family Medicine	Concord	MD	24	Residency
Cabarrus Family Medicine	Family Medicine-Sports Medicine	Concord	MD	1	Fellowship
Campbell University	Sports Medicine	Buies Creek	MD	2	Fellowship
Cape Fear Valley Medical Center (Campbell Affiliated)	Emergency Medicine	Fayetteville	DO	7	Residency
Cape Fear Valley Medical Center (Campbell Affiliated)	General Surgery	Fayetteville	DO	4	Residency
Cape Fear Valley Medical Center (Campbell Affiliated)	Internal Medicine	Fayetteville	DO	8	Residency
Cape Fear Valley Medical Center (Campbell Affiliated)	OBGYN	Fayetteville	DO	3	Residency
Cape Fear Valley Medical Center (Campbell Affiliated)	Traditional Rotating Intern	Fayetteville	DO	10	Residency
Carolinas HealthCare System Blue Ridge	Family Medicine	Morganton	DO	7	Residency
Carolinas HealthCare System Blue Ridge	Gastroenterology	Morganton	DO	4	Fellowship
Carolinas HealthCare System Blue Ridge	Geriatric Medicine	Morganton	DO	1	Fellowship
Carolinas HealthCare System Blue Ridge	Internal Medicine	Morganton	DO	23	Residency
Carolinas Medical Center	Brain Injury	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Emergency Medicine	Charlotte	MD	43	Residency
Carolinas Medical Center	Emergency Medicine - Medical Toxicology	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Emergency Medicine - Operational and Disaster Medicine	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Emergency Medicine - Pediatric Emergency Medicine	Charlotte	MD	5	Fellowship
Carolinas Medical Center	Emergency Medicine EMS	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Emergency Medicine Ultrasound	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Family Medicine	Charlotte	MD	33	Residency
Carolinas Medical Center	Female Pelvic Medicine & Reconstructive Surgery	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Geriatrics	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Internal Medicine	Charlotte	MD	43	Residency
Carolinas Medical Center	Internal Medicine - Advanced Endoscopy	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Internal Medicine - Gastroenterology	Charlotte	MD	6	Fellowship
Carolinas Medical Center	Internal Medicine - Hematology and Medical Oncology	Charlotte	MD	9	Fellowship
Carolinas Medical Center	Internal Medicine - Hepatology Research	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Internal Medicine - Transplant Hepatology	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Internal Medicine Chief Resident	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Neurological Surgery	Charlotte	MD	4	Residency
Carolinas Medical Center	Obstetrics and Gynecology	Charlotte	MD	24	Residency
Carolinas Medical Center	Orthopaedic Surgery	Charlotte	MD	26	Residency
Carolinas Medical Center	Orthopaedic Trauma	Charlotte	MD	3	Fellowship
Carolinas Medical Center	Pediatric Chief Resident	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Pediatrics	Charlotte	MD	36	Residency

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Carolinas Medical Center	Physical Medicine and Rehabilitation	Charlotte	MD	15	Residency
Carolinas Medical Center	Psychiatry	Charlotte	MD	3	Residency
Carolinas Medical Center	Sports Medicine	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Surgery	Charlotte	MD	31	Residency
Carolinas Medical Center	Surgery - Acute Care Surgery	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Surgery - Advanced GI Fellowship - Clinical	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Surgery - Advanced GI Fellowship - Research	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Surgery - Breast Surgical Oncology	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Surgery - GI and Minimally Invasive Bariatrics	Charlotte	MD	3	Fellowship
Carolinas Medical Center	Surgery - Hepato-Pancreato-Biliary	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Surgery - Surgical Critical Care	Charlotte	MD	2	Fellowship
Carolinas Medical Center	Urological Oncology	Charlotte	MD	1	Fellowship
Carolinas Medical Center	Urology	Charlotte	MD	2	Residency
Carolinas Medical Center	Vascular Surgery	Charlotte	MD	4	Fellowship
Cone Health	Family Medicine	Greensboro	MD	24	Residency
Cone Health	Internal Medicine	Greensboro	MD	22	Residency
Cone Health	Sports Medicine	Greensboro	MD	2	Fellowship
Duke University Medical Center	Abdominal Transplant Surgical Fellowship	Durham	MD	2	Fellowship
Duke University Medical Center	Adult and Pediatric Rheumatology	Durham	MD	3	Fellowship
Duke University Medical Center	Adult Cardiothoracic Anesthesiology	Durham	MD	13	Fellowship
Duke University Medical Center	Adult Congenital Heart Disease	Durham	MD	1	Fellowship
Duke University Medical Center	Adult Reconstructive Orthopaedics	Durham	MD	2	Fellowship
Duke University Medical Center	Advanced Heart Failure and Transplant Cardiology	Durham	MD	3	Fellowship
Duke University Medical Center	Advanced Surgical Urologic Oncology	Durham	MD	1	Fellowship
Duke University Medical Center	Advanced Training in Cardiology	Durham	MD	5	Fellowship
Duke University Medical Center	Advanced Training in Cardiothoracic Surgery	Durham	MD	3	Fellowship
Duke University Medical Center	Allergy and Immunology	Durham	MD	4	Fellowship
Duke University Medical Center	Allergy and Immunology Advanced Research Training	Durham	MD	1	Fellowship
Duke University Medical Center	Anesthesiology	Durham	MD	57	Residency
Duke University Medical Center	Biomedical Scholars Program	Durham	MD	1	Fellowship
Duke University Medical Center	Cardiovascular Disease	Durham	MD	25	Fellowship
Duke University Medical Center	Child Abuse Pediatrics	Durham	MD	1	Fellowship
Duke University Medical Center	Child and Adolescent Psychiatry	Durham	MD	6	Fellowship
Duke University Medical Center	Child Neurology	Durham	MD	6	Fellowship
Duke University Medical Center	Clinical Cardiac Electrophysiology	Durham	MD	5	Fellowship
Duke University Medical Center	Clinical Fellowship in Multiple Sclerosis and Neuroimmunology	Durham	MD	2	Fellowship

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Duke University Medical Center	Clinical Informatics	Durham	MD	2	Fellowship
Duke University Medical Center	Clinical Investigator Pathway-Cardiovascular Disease	Durham	MD	1	Fellowship
Duke University Medical Center	Clinical Neurophysiology	Durham	MD	4	Fellowship
Duke University Medical Center	Critical Care Medicine	Durham	MD	8	Fellowship
Duke University Medical Center	Cytopathology	Durham	MD	2	Fellowship
Duke University Medical Center	Dermatology	Durham	MD	10	Fellowship
Duke University Medical Center	Dermatology Clinical Research Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Dermatopathology	Durham	MD	2	Fellowship
Duke University Medical Center	Diagnostic Radiology	Durham	MD	48	Residency
Duke University Medical Center	Emergency Medicine	Durham	MD	30	Residency
Duke University Medical Center	Endocrine Surgery Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Endocrinology, Diabetes and Metabolism	Durham	MD	6	Fellowship
Duke University Medical Center	Endocrinology, Metabolism and Nutrition	Durham	MD	1	Fellowship
Duke University Medical Center	Family Medicine	Durham	MD	16	Residency
Duke University Medical Center	Fellowship in Neuro-Oncology	Durham	MD	1	Fellowship
Duke University Medical Center	Female Pelvic Medicine and Reconstructive Surgery	Durham	MD	3	Fellowship
Duke University Medical Center	Foot and Ankle Orthopaedics	Durham	MD	3	Fellowship
Duke University Medical Center	Gastroenterology	Durham	MD	15	Fellowship
Duke University Medical Center	Geriatric Medicine	Durham	MD	6	Fellowship
Duke University Medical Center	Geriatric Psychiatry	Durham	MD	2	Fellowship
Duke University Medical Center	Geriatrics Physician Fellowship	Durham	MD	2	Fellowship
Duke University Medical Center	Global Health - Infectious Disease Pathway	Durham	MD	2	Residency
Duke University Medical Center	Global Health - Internal Medicine Pathway	Durham	MD	3	Residency
Duke University Medical Center	Global Health - Psychiatry Pathway	Durham	MD	1	Residency
Duke University Medical Center	Global Health Pediatric Cardiology Pathway	Durham	MD	1	Fellowship
Duke University Medical Center	Global Health Residency/Fellowship	Durham	MD	3	Fellowship
Duke University Medical Center	Gynecologic Oncology	Durham	MD	3	Fellowship
Duke University Medical Center	Hand Surgery	Durham	MD	3	Fellowship
Duke University Medical Center	Hematology (Hematopathology) Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Hematology/Medical Oncology	Durham	MD	16	Fellowship
Duke University Medical Center	Hepatopancreatobiliary (HPB) Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Hospice and Palliative Medicine	Durham	MD	3	Fellowship
Duke University Medical Center	Infectious Disease	Durham	MD	5	Fellowship
Duke University Medical Center	Infectious Diseases Fellowship	Durham	MD	5	Fellowship
Duke University Medical Center	Internal Medicine	Durham	MD	122	Residency
Duke University Medical Center	Internal Medicine (P)	Durham	MD	10	Residency

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Duke University Medical Center	Internal Medicine/Pediatrics	Durham	MD	24	Residency
Duke University Medical Center	Internal Medicine/Psychiatry	Durham	MD	11	Residency
Duke University Medical Center	International Neonatal-Perinatal Medicine Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Interventional Cardiology	Durham	MD	3	Fellowship
Duke University Medical Center	Interventional Pulmonology Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Joint General Surgery and Thoracic Surgery	Durham	MD	6	Fellowship
Duke University Medical Center	Management and Leadership Pathway for Residents - Internal Medicine	Durham	MD	3	Fellowship
Duke University Medical Center	Maternal - Fetal Medicine	Durham	MD	6	Fellowship
Duke University Medical Center	Medical Biochemical Genetics	Durham	MD	1	Fellowship
Duke University Medical Center	Minimally Invasive and Bariatric Surgery Fellowship	Durham	MD	1	Fellowship
Duke University Medical Center	Neonatal-Perinatal Medicine	Durham	MD	9	Fellowship
Duke University Medical Center	Nephrology	Durham	MD	7	Fellowship
Duke University Medical Center	Neurocritical Care Fellowship	Durham	MD	4	Fellowship
Duke University Medical Center	Neurocritical Care Program	Durham	MD	1	Fellowship
Duke University Medical Center	Neurological Surgery	Durham	MD	19	Fellowship
Duke University Medical Center	Neurology	Durham	MD	18	Fellowship
Duke University Medical Center	Neuromuscular Medicine	Durham	MD	3	Fellowship
Duke University Medical Center	Neuropathology	Durham	MD	1	Fellowship
Duke University Medical Center	Neuroradiology	Durham	MD	8	Fellowship
Duke University Medical Center	Neurosurgical Anesthesiology	Durham	MD	1	Fellowship
Duke University Medical Center	Obstetric Anesthesiology	Durham	MD	1	Fellowship
Duke University Medical Center	Obstetrics and Gynecology	Durham	MD	32	Residency
Duke University Medical Center	Ophthalmology	Durham	MD	18	Fellowship
Duke University Medical Center	Orthopaedic Surgery	Durham	MD	41	Residency
Duke University Medical Center	Orthopaedics Sports Medicine	Durham	MD	3	Fellowship
Duke University Medical Center	Otolaryngology	Durham	MD	15	Fellowship
Duke University Medical Center	Pain Medicine	Durham	MD	4	Fellowship
Duke University Medical Center	Parkinson's Disease and Movement Disorders	Durham	MD	2	Fellowship
Duke University Medical Center	Pathology - Anatomic and Clinical	Durham	MD	21	Residency
Duke University Medical Center	Pediatric Anesthesiology	Durham	MD	2	Fellowship
Duke University Medical Center	Pediatric Bone Marrow Transplant	Durham	MD	1	Fellowship
Duke University Medical Center	Pediatric Cardiology	Durham	MD	5	Fellowship
Duke University Medical Center	Pediatric Critical Care Medicine	Durham	MD	9	Fellowship
Duke University Medical Center	Pediatric Endocrinology	Durham	MD	3	Fellowship
Duke University Medical Center	Pediatric Hematology-Oncology	Durham	MD	6	Fellowship
Duke University Medical Center	Pediatric Infectious Diseases	Durham	MD	4	Fellowship

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Duke University Medical Center	Pediatric Nephrology	Durham	MD	1	Fellowship
Duke University Medical Center	Pediatric Radiology	Durham	MD	1	Fellowship
Duke University Medical Center	Pediatric Rheumatology	Durham	MD	1	Fellowship
Duke University Medical Center	Pediatrics	Durham	MD	50	Residency
Duke University Medical Center	Plastic Surgery	Durham	MD	3	Residency
Duke University Medical Center	Plastic Surgery - Integrated	Durham	MD	15	Residency
Duke University Medical Center	Preventive Medicine - Occupational Medicine	Durham	MD	2	Fellowship
Duke University Medical Center	Psychiatry	Durham	MD	38	Residency
Duke University Medical Center	Pulmonary Diseases/Critical Care Medicine	Durham	MD	18	Fellowship
Duke University Medical Center	Radiation Oncology	Durham	MD	12	Fellowship
Duke University Medical Center	Reconstructive Urology and Genitourinary Cancer Survivorship	Durham	MD	1	Fellowship
Duke University Medical Center	Regional Anesthesiology and Acute Pain Medicine	Durham	MD	4	Fellowship
Duke University Medical Center	Reproductive Endocrinology and Fertility	Durham	MD	3	Fellowship
Duke University Medical Center	Rheumatology	Durham	MD	6	Fellowship
Duke University Medical Center	Sleep Medicine	Durham	MD	2	Fellowship
Duke University Medical Center	Special Infant Care	Durham	MD	1	Fellowship
Duke University Medical Center	Sports Medicine (FP)	Durham	MD	3	Fellowship
Duke University Medical Center	Surgery	Durham	MD	29	Residency
Duke University Medical Center	Surgery (P)	Durham	MD	8	Residency
Duke University Medical Center	Surgery Research Fellowship	Durham	MD	19	Fellowship
Duke University Medical Center	Surgical Critical Care	Durham	MD	1	Fellowship
Duke University Medical Center	Thoracic Surgery	Durham	MD	4	Fellowship
Duke University Medical Center	Thoracic Surgery - Integrated	Durham	MD	3	Fellowship
Duke University Medical Center	Transplant Hepatology	Durham	MD	1	Fellowship
Duke University Medical Center	Transplant Infectious Diseases Research	Durham	MD	3	Fellowship
Duke University Medical Center	Undersea and Hyperbaric Med.-Prev. Med.	Durham	MD	2	Fellowship
Duke University Medical Center	Urology	Durham	MD	16	Fellowship
Duke University Medical Center	Urology Surgeon Scientist Year	Durham	MD	4	Fellowship
Duke University Medical Center	Vascular Neurology	Durham	MD	1	Fellowship
Duke University Medical Center	Vascular Surgery	Durham	MD	2	Fellowship
Duke University Medical Center	Vascular/Interventional Radiology	Durham	MD	5	Fellowship
Harnett Health (Campbell Affiliated)	Family Medicine	Dunn	DO	2	Residency
Harnett Health (Campbell Affiliated)	Internal Medicine	Dunn	DO	13	Residency
Harnett Health (Campbell Affiliated)	Traditional Rotating Intern	Dunn	DO	8	Residency
MAHEC/Mission Health System	Family Medicine	Asheville	MD	34	Residency
MAHEC/Mission Health System	General Surgery	Asheville	MD	8	Residency

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
MAHEC/Mission Health System	Hospice Fellowship	Asheville	MD	2	Fellowship
MAHEC/Mission Health System	Obstetrics and Gynecology	Asheville	MD	16	Residency
MAHEC/Mission Health System	Psychiatry	Asheville	MD	4	Residency
MAHEC/Mission Health System	Sports Medicine Fellowship	Asheville	MD	2	Fellowship
MAHEC/Mission Health System	Family Medicine	Henderson	MD	13	Residency
Novant Health	Family Medicine - MD	Cornelius	MD	4	Residency
Novant Health	Family Medicine- DO	Cornelius	MD	8	Residency
Sampson Regional Medical Center (Campbell Affiliated)	Dermatology	Clinton	DO	6	Residency
Sampson Regional Medical Center (Campbell Affiliated)	Family Medicine	Clinton	DO	9	Residency
Sampson Regional Medical Center (Campbell Affiliated)	Traditional Rotating Intern	Clinton	DO	4	Residency
South East AHEC/ New Hanover Regional Medical Center	Family Medicine	Wilmington	MD	18	Residency
South East AHEC/ New Hanover Regional Medical Center	Internal Medicine	Wilmington	MD	23	Residency
South East AHEC/ New Hanover Regional Medical Center	Obstetrics and Gynecology	Wilmington	MD	17	Residency
South East AHEC/ New Hanover Regional Medical Center	Surgery	Wilmington	MD	16	Residency
Southeastern Health (Campbell Affiliated)	Emergency Medicine	Lumberton	DO	12	Residency
Southeastern Health (Campbell Affiliated)	Family Medicine	Lumberton	DO	24	Residency
Southeastern Health (Campbell Affiliated)	Internal Medicine	Lumberton	DO	30	Residency
Southeastern Health (Campbell Affiliated)	Traditional Rotating Intern	Lumberton	DO	12	Residency
Southern Regional AHEC	Family Medicine - MD	Fayetteville	MD	11	Residency
Southern Regional AHEC	Family Medicine- DO	Fayetteville	MD	13	Residency
UNC Health Care	Allergy & Immunology	Chapel Hill	MD	5	Fellowship
UNC Health Care	Anesthesiology	Chapel Hill	MD	52	Residency
UNC Health Care	Anesthesiology/Obstetrics	Chapel Hill	MD	1	Fellowship
UNC Health Care	Anesthesiology/Pain Medicine	Chapel Hill	MD	3	Fellowship
UNC Health Care	Anesthesiology/Pediatrics	Chapel Hill	MD	3	Fellowship
UNC Health Care	Combined Anesthesiology/Pediatrics	Chapel Hill	MD	3	Residency
UNC Health Care	Dermatology	Chapel Hill	MD	16	Residency
UNC Health Care	Dermatology/Procedural Dermatology	Chapel Hill	MD	1	Fellowship
UNC Health Care	Emergency Medicine	Chapel Hill	MD	29	Residency
UNC Health Care	Emergency Medicine/Emergency Medical Services	Chapel Hill	MD	2	Fellowship
UNC Health Care	Emergency Medicine/Pediatrics	Chapel Hill	MD	4	Fellowship
UNC Health Care	Family Medicine	Chapel Hill	MD	32	Residency
UNC Health Care	Family Medicine/Sports Medicine	Chapel Hill	MD	2	Fellowship
UNC Health Care	McLendon Labs	Chapel Hill	MD	10	Fellowship
UNC Health Care	Medical Genetics	Chapel Hill	MD	1	Fellowship
UNC Health Care	Medicine	Chapel Hill	MD	82	Residency

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
UNC Health Care	Medicine/Advanced Heart Failure and Transplant Cardiology	Chapel Hill	MD	1	Fellowship
UNC Health Care	Medicine/Cardiology	Chapel Hill	MD	18	Fellowship
UNC Health Care	Medicine/Clinical Cardiac Electrophysiology	Chapel Hill	MD	1	Fellowship
UNC Health Care	Medicine/Endocrinology	Chapel Hill	MD	4	Fellowship
UNC Health Care	Medicine/Gastroenterology	Chapel Hill	MD	14	Fellowship
UNC Health Care	Medicine/Geriatrics	Chapel Hill	MD	3	Fellowship
UNC Health Care	Medicine/Hematology & Oncology	Chapel Hill	MD	18	Fellowship
UNC Health Care	Medicine/Hospice & Palliative Medicine	Chapel Hill	MD	3	Fellowship
UNC Health Care	Medicine/Infectious Diseases	Chapel Hill	MD	5	Fellowship
UNC Health Care	Medicine/Interventional Cardiology	Chapel Hill	MD	3	Fellowship
UNC Health Care	Medicine/Nephrology	Chapel Hill	MD	6	Fellowship
UNC Health Care	Medicine/Pediatrics	Chapel Hill	MD	23	Residency
UNC Health Care	Medicine/Pulmonology	Chapel Hill	MD	12	Fellowship
UNC Health Care	Medicine/Rheumatology	Chapel Hill	MD	4	Fellowship
UNC Health Care	Neurology	Chapel Hill	MD	20	Residency
UNC Health Care	Neurology/Child	Chapel Hill	MD	3	Residency
UNC Health Care	Neurosurgery	Chapel Hill	MD	11	Residency
UNC Health Care	OB/GYN	Chapel Hill	MD	28	Residency
UNC Health Care	OB/GYN/Female Pelvic Medicine & Reconstructive Surgery	Chapel Hill	MD	3	Fellowship
UNC Health Care	OB/GYN/Gynecologic Oncology	Chapel Hill	MD	6	Fellowship
UNC Health Care	OB/GYN/Maternal Fetal Medicine	Chapel Hill	MD	6	Fellowship
UNC Health Care	OB/GYN/Reproductive Endocrinology and Infertility	Chapel Hill	MD	3	Fellowship
UNC Health Care	Ophthalmology	Chapel Hill	MD	12	Residency
UNC Health Care	Oral & Maxillofacial Surgery	Chapel Hill	MD	17	Residency
UNC Health Care	Orthopaedics	Chapel Hill	MD	27	Residency
UNC Health Care	Otolaryngology	Chapel Hill	MD	22	Residency
UNC Health Care	Pathology	Chapel Hill	MD	16	Residency
UNC Health Care	Pathology/Cytopathology	Chapel Hill	MD	2	Fellowship
UNC Health Care	Pathology/Forensic	Chapel Hill	MD	1	Fellowship
UNC Health Care	Pediatric Dentistry	Chapel Hill	MD	9	Residency
UNC Health Care	Pediatrics	Chapel Hill	MD	61	Residency
UNC Health Care	Pediatrics/Critical Care	Chapel Hill	MD	6	Fellowship
UNC Health Care	Pediatrics/Endocrinology	Chapel Hill	MD	3	Fellowship
UNC Health Care	Pediatrics/Gastroenterology	Chapel Hill	MD	1	Fellowship
UNC Health Care	Pediatrics/Hematology Oncology	Chapel Hill	MD	5	Fellowship
UNC Health Care	Pediatrics/Infectious Diseases	Chapel Hill	MD	1	Fellowship

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
UNC Health Care	Pediatrics/Neonatology	Chapel Hill	MD	7	Fellowship
UNC Health Care	Pediatrics/Nephrology	Chapel Hill	MD	2	Fellowship
UNC Health Care	Pediatrics/Pulmonology	Chapel Hill	MD	5	Fellowship
UNC Health Care	Physical Medicine & Rehabilitation	Chapel Hill	MD	12	Residency
UNC Health Care	Plastic Surgery	Chapel Hill	MD	12	Residency
UNC Health Care	Preventive Medicine	Chapel Hill	MD	10	Residency
UNC Health Care	Psychiatry	Chapel Hill	MD	53	Residency
UNC Health Care	Psychiatry/Child	Chapel Hill	MD	10	Residency
UNC Health Care	Psychiatry/Forensic	Chapel Hill	MD	3	Fellowship
UNC Health Care	Psychiatry/Psychosomatic	Chapel Hill	MD	2	Fellowship
UNC Health Care	Radiation Oncology	Chapel Hill	MD	9	Residency
UNC Health Care	Radiology	Chapel Hill	MD	32	Residency
UNC Health Care	Radiology/Interventional Radiology Integrated	Chapel Hill	MD	2	Fellowship
UNC Health Care	Radiology/Neuroradiology	Chapel Hill	MD	4	Fellowship
UNC Health Care	Radiology/Vascular	Chapel Hill	MD	3	Fellowship
UNC Health Care	Sleep Medicine	Chapel Hill	MD	2	Fellowship
UNC Health Care	Surgery	Chapel Hill	MD	46	Residency
UNC Health Care	Surgery/Cardiothoracic	Chapel Hill	MD	1	Fellowship
UNC Health Care	Surgery/Critical Care	Chapel Hill	MD	2	Fellowship
UNC Health Care	Surgery/Surgical Oncology	Chapel Hill	MD	2	Fellowship
UNC Health Care	Surgery/Vascular	Chapel Hill	MD	1	Fellowship
UNC Health Care	Urology	Chapel Hill	MD	12	Residency
Vidant Health	Acute Care Surgery	Greenville	MD	2	Residency
Vidant Health	Cardiovascular Disease	Greenville	MD	12	Residency
Vidant Health	Child & Adolescent Psychiatry	Greenville	MD	1	Fellowship
Vidant Health	Critical Care	Greenville	MD	2	Residency
Vidant Health	Cytopathology	Greenville	MD	1	Residency
Vidant Health	Dermatology	Greenville	MD	5	Residency
Vidant Health	Diabetes	Greenville	MD	2	Residency
Vidant Health	Emergency Medical Services	Greenville	MD	1	Residency
Vidant Health	Emergency Medicine	Greenville	MD	37	Residency
Vidant Health	Endocrinology	Greenville	MD	4	Residency
Vidant Health	Family Medicine	Greenville	MD	36	Residency
Vidant Health	Gastroenterology	Greenville	MD	6	Residency
Vidant Health	Geriatric Medicine	Greenville	MD	2	Residency
Vidant Health	Hematology Oncology	Greenville	MD	12	Residency

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Vidant Health	Infectious Disease	Greenville	MD	4	Residency
Vidant Health	Internal Med/Emergency Med Critical Care	Greenville	MD	2	Residency
Vidant Health	Internal Medicine	Greenville	MD	54	Residency
Vidant Health	Internal Medicine/Emergency	Greenville	MD	10	Residency
Vidant Health	Internal Medicine/Pediatrics	Greenville	MD	23	Residency
Vidant Health	Internal Medicine/Psychiatry	Greenville	MD	10	Residency
Vidant Health	Interventional Cardiology	Greenville	MD	2	Residency
Vidant Health	Neonatal - Perinatal	Greenville	MD	7	Residency
Vidant Health	Nephrology	Greenville	MD	3	Residency
Vidant Health	Obstetrics & Gynecology	Greenville	MD	21	Residency
Vidant Health	Pathology	Greenville	MD	9	Residency
Vidant Health	Pediatrics	Greenville	MD	30	Residency
Vidant Health	Physical Medicine & Rehab	Greenville	MD	20	Residency
Vidant Health	Psychiatry	Greenville	MD	30	Residency
Vidant Health	Pulmonary Critical Care	Greenville	MD	12	Residency
Vidant Health	Sports Medicine	Greenville	MD	1	Residency
Vidant Health	Surgery-General	Greenville	MD	31	Residency
Vidant Health	Surgical Critical Care	Greenville	MD	2	Residency
Vidant Health	Thoracic Surgery	Greenville	MD	2	Residency
Vidant Health	Vascular Surgery	Greenville	MD	2	Residency
Wake Forest Baptist Medical Center	Allergy Immunology - Allergy Immunology	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Anesthesiology - Adult Cardiothoracic Anesthesia	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Anesthesiology - Anesthesiology	Winston-Salem	MD	56	Residency
Wake Forest Baptist Medical Center	Anesthesiology - Obstetric Anesthesiology	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Anesthesiology - Pain Medicine	Winston-Salem	MD	6	Fellowship
Wake Forest Baptist Medical Center	Dermatology - Dermatology	Winston-Salem	MD	10	Residency
Wake Forest Baptist Medical Center	Emergency Medicine - Emergency Medicine	Winston-Salem	MD	45	Residency
Wake Forest Baptist Medical Center	Emergency Medicine - Emergency Medicine Services Fellowship	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Emergency Medicine - Pediatric Emergency Medicine	Winston-Salem	MD	3	Fellowship
Wake Forest Baptist Medical Center	Family Medicine - Family Medicine	Winston-Salem	MD	31	Residency
Wake Forest Baptist Medical Center	Family Medicine - Sports Medicine - Family Medicine	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Cardiovascular Disease	Winston-Salem	MD	16	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Clinic Cardiac Electrophysiology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Critical Care Medicine IM	Winston-Salem	MD	4	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Endocrinology	Winston-Salem	MD	4	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Gastroenterology	Winston-Salem	MD	9	Fellowship

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Geriatric Medicine	Winston-Salem	MD	4	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Hematology Oncology	Winston-Salem	MD	14	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Hospice Palliative Medicine	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Infectious Disease	Winston-Salem	MD	6	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Internal Medicine	Winston-Salem	MD	105	Residency
Wake Forest Baptist Medical Center	Internal Medicine - Interventional Cardiology	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Nephrology	Winston-Salem	MD	6	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Pulmonary Disease and Critical Care Medicine	Winston-Salem	MD	11	Fellowship
Wake Forest Baptist Medical Center	Internal Medicine - Rheumatology	Winston-Salem	MD	3	Fellowship
Wake Forest Baptist Medical Center	Neurological Surgery - Neurological Surgery	Winston-Salem	MD	13	Residency
Wake Forest Baptist Medical Center	Neurology - Child Neurology	Winston-Salem	MD	3	Residency
Wake Forest Baptist Medical Center	Neurology - Clinical Neurophysiology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Neurology - Epilepsy	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Neurology - Neurology	Winston-Salem	MD	15	Residency
Wake Forest Baptist Medical Center	Neurology - Neuromuscular Medicine	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Neurology - Sleep Medicine	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Neurology - Vascular Neurology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Obstetrics and Gynecology - Maternal-Fetal Health	Winston-Salem	MD	3	Fellowship
Wake Forest Baptist Medical Center	Obstetrics and Gynecology - Obstetrics and Gynecology	Winston-Salem	MD	24	Residency
Wake Forest Baptist Medical Center	Ophthalmology - Ophthalmology	Winston-Salem	MD	12	Residency
Wake Forest Baptist Medical Center	Orthopaedic Surgery - Hand Surgery Orthopaedics	Winston-Salem	MD	3	Fellowship
Wake Forest Baptist Medical Center	Orthopaedic Surgery - Orthopaedic Surgery	Winston-Salem	MD	25	Residency
Wake Forest Baptist Medical Center	Orthopaedic Surgery - Orthopaedics Sports Medicine	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Orthopaedic Surgery - Podiatry	Winston-Salem	MD	6	Residency
Wake Forest Baptist Medical Center	Otolaryngology - Dentistry	Winston-Salem	MD	5	Residency
Wake Forest Baptist Medical Center	Otolaryngology - Otolaryngology	Winston-Salem	MD	14	Residency
Wake Forest Baptist Medical Center	Pathology - Cytopathology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Pathology - Dermatopathology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Pathology - Forensic Pathology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Pathology - Hematology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Pathology - Pathology	Winston-Salem	MD	19	Residency
Wake Forest Baptist Medical Center	Pediatrics - Neonatal Perinatal Medicine	Winston-Salem	MD	7	Fellowship
Wake Forest Baptist Medical Center	Pediatrics - Pediatrics	Winston-Salem	MD	41	Residency
Wake Forest Baptist Medical Center	Plastic Surgery-integrated - Plastic Surgery-integrated	Winston-Salem	MD	12	Residency
Wake Forest Baptist Medical Center	Psychiatry - Child Adolescent Psychiatry	Winston-Salem	MD	5	Residency
Wake Forest Baptist Medical Center	Psychiatry - Psychiatry	Winston-Salem	MD	27	Residency

Institution Name	Residency Program	Location	DO or MD	# of Positions	Residency or Fellowship
Wake Forest Baptist Medical Center	Radiation Oncology - Radiation Oncology	Winston-Salem	MD	7	Residency
Wake Forest Baptist Medical Center	Radiology Diagnostic - Abdominal Radiology	Winston-Salem	MD	4	Fellowship
Wake Forest Baptist Medical Center	Radiology Diagnostic - Musculoskeletal Radiology	Winston-Salem	MD	3	Fellowship
Wake Forest Baptist Medical Center	Radiology Diagnostic - Neuroradiology	Winston-Salem	MD	4	Fellowship
Wake Forest Baptist Medical Center	Radiology Diagnostic - Nuclear Radiology	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Radiology Diagnostic - Radiology Diagnostic	Winston-Salem	MD	41	Residency
Wake Forest Baptist Medical Center	Surgery - Complex General Surgical Oncology	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Surgery - Surgery	Winston-Salem	MD	40	Residency
Wake Forest Baptist Medical Center	Surgery - Surgical Critical Care	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Surgery - Vascular Surgery	Winston-Salem	MD	4	Fellowship
Wake Forest Baptist Medical Center	Thoracic Surgery - Thoracic Surgery	Winston-Salem	MD	2	Fellowship
Wake Forest Baptist Medical Center	Urology - Female Pelvic Medicine and Reconstructive Surgery	Winston-Salem	MD	1	Fellowship
Wake Forest Baptist Medical Center	Urology - Urology	Winston-Salem	MD	10	Residency
TOTAL				**3,774**	

Source: Program on Health Workforce and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill with data gathered from individual programs.

Appendix, Table 2. Physician Primary Area of Practice and Urban/Rural
Primary Practice Location of NC Residency Program Graduates in Practice in NC in 2016

Residency Program	Urban/Rural	Family Medicine		Internal Medicine		Obstetrics & Gynecology		Pediatrics		General Surgery		Anesthesiology	
		#	%	#	%	#	%	#	%	#	%	#	%
1. Duke University Medical Center	**Total**	76		78		42		87		15		101	
	Rural	*20*	*26%*	*8*	*10%*	*5*	*12%*	*4*	*5%*	*0*	*0%*	*8*	*8%*
	Urban	*56*	*74%*	*70*	*90%*	*37*	*88%*	*83*	*95%*	*15*	*100%*	*92*	*91%*
2. UNC Health Care	**Total**	112		97		44		178		33		107	
	Rural	*17*	*15%*	*3*	*3%*	*3*	*7%*	*15*	*8%*	*7*	*21%*	*9*	*8%*
	Urban	*95*	*85%*	*93*	*96%*	*41*	*93%*	*6*	*92%*	*26*	*79%*	*98*	*92%*
3. Wake Forest Baptist Medical Center	**Total**	153		91		60		129		27		120	
	Rural	*24*	*16%*	*14*	*15%*	*1*	*2%*	*9*	*7%*	*6*	*22%*	*2*	*2%*
	Urban	*128*	*84%*	*76*	*84%*	*59*	*98%*	*120*	*93%*	*20*	*74%*	*118*	*98%*
4. Vidant Health	**Total**	149		80		46		81		17		1	
	Rural	*45*	*30%*	*21*	*26%*	*15*	*33%*	*23*	*28%*	*7*	*41%*	*0*	*0%*
	Urban	*104*	*70%*	*59*	*74%*	*31*	*67%*	*57*	*70%*	*10*	*59%*	*1*	*100%*
5. Carolinas Medical Center	**Total**	144		94		63		102		24		0	
	Rural	*14*	*10%*	*6*	*6%*	*8*	*13%*	*7*	*7%*	*8*	*33%*	*0*	*0%*
	Urban	*130*	*90%*	*88*	*94%*	*55*	*87%*	*95*	*93%*	*16*	*67%*	*0*	*0%*
6. Cone Health	**Total**	116		51		0		9		0		0	
	Rural	*14*	*12%*	*5*	*10%*	*0*	*0%*	*3*	*33%*	*0*	*0%*	*0*	*0%*
	Urban	*102*	*88%*	*46*	*90%*	*0*	*0%*	*6*	*67%*	*0*	*0%*	*0*	*0%*
7. New Hanover Regional Medical Center	**Total**	35		33		31		1		9		0	
	Rural	*10*	*29%*	*5*	*15%*	*14*	*45%*	*0*	*0%*	*4*	*44%*	*0*	*0%*
	Urban	*24*	*69%*	*28*	*85%*	*17*	*55%*	*1*	*100%*	*5*	*56%*	*0*	*0%*
8. MAHEC/Mission Health System, Asheville	**Total**	148		0		26		1		0		0	
	Rural	*22*	*15%*	*0*	*0%*	*5*	*19%*	*1*	*100%*	*0*	*0%*	*0*	*0%*
	Urban	*125*	*84%*	*0*	*0%*	*21*	*81%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
9. Cabarrus Family Medicine Residency	**Total**	67		0		0		1		0		0	
	Rural	*10*	*15%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*57*	*85%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*	*0*	*0%*

Residency Program	Urban/Rural	Family Medicine		Internal Medicine		Obstetrics & Gynecology		Pediatrics		General Surgery		Anesthesiology	
		#	%	#	%	#	%	#	%	#	%	#	%
10. Southern Regional AHEC	**Total**	64		0		0		0		0		0	
	Rural	*7*	*11%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*57*	*89%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
11. Womack Army Medical Center	**Total**	12		0		0		0		0		0	
	Rural	*3*	*25%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*9*	*75%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
12. MAHEC/Mission Health System, Hendersonville	**Total**	12		2		0		3		0		0	
	Rural	*2*	*17%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*10*	*83%*	*2*	*100%*	*0*	*0%*	*3*	*100%*	*0*	*0%*	*0*	*0%*
13. Camp LeJeune Naval Hospital	**Total**	5		0		0		0		0		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*5*	*100%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
14. Other NC Residency Program	**Total**	7		5		0		1		0		0	
	Rural	*0*	*0%*	*1*	*20%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*7*	*100%*	*4*	*80%*	*0*	*0%*	*1*	*100%*	*0*	*0%*	*0*	*0%*
99. Non-NC Residency Program	**Total**	1,418		1,443		555		985		479		688	
	Rural	*327*	*23%*	*284*	*20%*	*109*	*20%*	*177*	*18%*	*121*	*25%*	*79*	*11%*
	Urban	*1082*	*76%*	*1,149*	*80%*	*445*	*80%*	*799*	*81%*	*354*	*74%*	*607*	*88%*
NC RESIDENCY PROGRAM TOTALS	**Total**	1,100		531		312		593		125		329	
	Rural	*188*	*17%*	*63*	*12%*	*51*	*16%*	*62*	*10%*	*32*	*26%*	*19*	*6%*
	Urban	*909*	*83%*	*466*	*88%*	*261*	*84%*	*530*	*89%*	*92*	*74%*	*309*	*94%*
2016 NC PHYSICIAN TOTALS	**Total**	2,518		1,974		867		1,578		604		1,017	
	Rural	*515*	*20%*	*347*	*18%*	*160*	*18%*	*239*	*15%*	*153*	*25%*	*98*	*10%*
	Urban	*1991*	*79%*	*1615*	*82%*	*706*	*81%*	*1329*	*84%*	*446*	*74%*	*916*	*90%*

Source: Program on Health Workforce and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill with data gathered from the North Carolina Medical Board.

Residency Program	Urban/Rural	Neurology		Neurological Surgery		Psychiatry		Pediatric Psychiatry		Addiction Psychiatry		Geriatrics		Urology	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
1. Duke University Medical Center	**Total**	43		11		131		26		7		9		24	
	Rural	*1*	*2%*	*0*	*0%*	*18*	*14%*	*1*	*4%*	*0*	*0%*	*1*	*11%*	*1*	*4%*
	Urban	*41*	*95%*	*11*	*100%*	*113*	*86%*	*24*	*92%*	*7*	*100%*	*8*	*89%*	*23*	*96%*
2. UNC Health Care	**Total**	22		7		193		51		12		15		26	
	Rural	*1*	*5%*	*0*	*0%*	*30*	*16%*	*6*	*12%*	*1*	*8%*	*0*	*0%*	*3*	*12%*
	Urban	*21*	*95%*	*7*	*100%*	*163*	*84%*	*45*	*88%*	*11*	*92%*	*15*	*100%*	*23*	*88%*
3. Wake Forest Baptist Medical Center	**Total**	43		12		73		14		3		15		22	
	Rural	*3*	*7%*	*1*	*8%*	*10*	*14%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*4*	*18%*
	Urban	*40*	*93%*	*11*	*92%*	*63*	*86%*	*14*	*100%*	*3*	*100%*	*15*	*100%*	*17*	*77%*
4. Vidant Health	**Total**	1		0		61		10		3		13		0	
	Rural	*0*	*0%*	*0*	*0%*	*8*	*13%*	*2*	*20%*	*0*	*0%*	*3*	*23%*	*0*	*0%*
	Urban	*1*	*100%*	*0*	*0%*	*53*	*87%*	*8*	*80%*	*3*	*100%*	*10*	*77%*	*0*	*0%*
5. Carolinas Medical Center	**Total**	0		1		0		0		5		8		4	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*13%*	*0*	*0%*
	Urban	*0*	*0%*	*1*	*100%*	*0*	*0%*	*0*	*0%*	*5*	*100%*	*7*	*88%*	*4*	*####*
6. Cone Health	**Total**	0		0		0		0		0		12		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*8%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*11*	*92%*	*0*	*0%*
7. New Hanover Regional Medical Center	**Total**	0		0		0		0		1		1		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*	*0*	*0%*
8. MAHEC/Mission Health System, Asheville	**Total**	0		0		0		0		0		7		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*14%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*6*	*86%*	*0*	*0%*
9. Cabarrus Family Medicine Residency	**Total**	0		0		0		0		0		1		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*

Residency Program	Urban/Rural	Neurology		Neurological Surgery		Psychiatry		Pediatric Psychiatry		Addiction Psychiatry		Geriatrics		Urology	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
10. Southern Regional AHEC	**Total**	0		0		0		0		1		1		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*1*	*100%*	*0*	*0%*
11. Womack Army Medical Center	**Total**	0		0		0		0		0		1		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*
12. MAHEC/Mission Health System, Hendersonville	**Total**	0		0		0		0		0		0		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
13. Camp LeJeune Naval Hospital	**Total**	0		0		0		0		0		0		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
14. Other NC Residency Program	**Total**	0		0		1		0		0		1		0	
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
	Urban	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*	*0*	*0%*	*1*	*100%*	*0*	*0%*
99. Non-NC Residency Program	**Total**	313		113		533		103		52		166		259	
	Rural	*33*	*11%*	*4*	*4%*	*71*	*13%*	*8*	*8%*	*7*	*13%*	*23*	*14%*	*64*	*25%*
	Urban	*279*	*89%*	*109*	*96%*	*461*	*86%*	*95*	*92%*	*45*	*87%*	*142*	*86%*	*194*	*75%*
NC RESIDENCY PROGRAM TOTALS	**Total**	109		31		459		101		32		84		76	
	Rural	*5*	*5%*	*1*	*3%*	*66*	*14%*	*9*	*9%*	*1*	*3%*	*8*	*10%*	*8*	*11%*
	Urban	*103*	*94%*	*30*	*97%*	*393*	*86%*	*91*	*90%*	*31*	*97%*	*76*	*90%*	*67*	*88%*
2016 NC PHYSICIAN TOTALS	**Total**	422		144		992		204		84		250		335	
	Rural	*38*	*9%*	*5*	*3%*	*137*	*14%*	*17*	*8%*	*8*	*10%*	*31*	*12%*	*72*	*21%*
	Urban	*382*	*91%*	*139*	*97%*	*854*	*86%*	*186*	*91%*	*76*	*90%*	*218*	*87%*	*261*	*78%*

Source: Program on Health Workforce and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill with data gathered from the North Carolina Medical Board.

Residency Program	Urban/Rural	Hospitalist		Urgent Care		Other Specialty		Total All Residency Programs		Total Primary Care	Total Psychiatry
		#	%	#	%	#	%	#	%	#	#
1. Duke University Medical Center	**Total**	51		5		892		1598		283	164
	Rural	*4*	*8%*	*0*	*0%*	*43*	*5%*	*114*	*7%*	*37*	*19*
	Urban	*47*	*92%*	*5*	*100%*	*847*	*95%*	*1479*	*93%*	*246*	*144*
2. UNC Health Care	**Total**	53		13		846		1809		431	256
	Rural	*2*	*4%*	*0*	*0%*	*52*	*6%*	*149*	*8%*	*38*	*37*
	Urban	*50*	*94%*	*13*	*100%*	*793*	*94%*	*1657*	*92%*	*392*	*219*
3. Wake Forest Baptist Medical Center	**Total**	47		8		690		1507		433	90
	Rural	*5*	*11%*	*0*	*0%*	*56*	*8%*	*135*	*9%*	*48*	*10*
	Urban	*42*	*89%*	*8*	*100%*	*629*	*91%*	*1363*	*90%*	*383*	*80*
4. Vidant Health	**Total**	62		24		311		859		356	74
	Rural	*23*	*37%*	*9*	*38%*	*55*	*18%*	*211*	*25%*	*104*	*10*
	Urban	*39*	*63%*	*15*	*63%*	*256*	*82%*	*647*	*75%*	*251*	*64*
5. Carolinas Medical Center	**Total**	23		14		259		741		403	5
	Rural	*0*	*0%*	*0*	*0%*	*20*	*8%*	*64*	*9%*	*35*	*0*
	Urban	*23*	*100%*	*14*	*100%*	*237*	*92%*	*675*	*91%*	*368*	*5*
6. Cone Health	**Total**	20		11		64		283		176	0
	Rural	*5*	*25%*	*0*	*0%*	*5*	*8%*	*33*	*12%*	*22*	*0*
	Urban	*15*	*75%*	*11*	*100%*	*59*	*92%*	*250*	*88%*	*154*	*0*
7. New Hanover Regional Medical Center	**Total**	17		4		45		177		100	1
	Rural	*3*	*18%*	*1*	*25%*	*12*	*27%*	*50*	*28%*	*29*	*0*
	Urban	*14*	*82%*	*3*	*75%*	*33*	*73%*	*126*	*71%*	*70*	*1*
8. MAHEC/Mission Health System, Asheville	**Total**	2		2		14		200		175	0
	Rural	*0*	*0%*	*0*	*0%*	*2*	*14%*	*31*	*16%*	*28*	*0*
	Urban	*2*	*100%*	*2*	*100%*	*12*	*86%*	*168*	*84%*	*146*	*0*
9. Cabarrus Family Medicine Residency	**Total**	11		1		6		87		68	0
	Rural	*0*	*0%*	*0*	*0%*	*1*	*17%*	*11*	*13%*	*10*	*0*
	Urban	*11*	*100%*	*1*	*100%*	*5*	*83%*	*76*	*87%*	*58*	*0*

Residency Program	Urban/Rural	Hospitalist		Urgent Care		Other Specialty		Total All Residency Programs		Total Primary Care	Total Psychiatry
		#	%	#	%	#	%	#	%	#	#
10. Southern Regional AHEC	**Total**	4		2		8		80		64	1
	Rural	*1*	*25%*	*0*	*0%*	*4*	*50%*	*12*	*15%*	*7*	*0*
	Urban	*3*	*75%*	*2*	*100%*	*4*	*50%*	*68*	*85%*	*57*	*1*
11. Womack Army Medical Center	**Total**	0		0		6		19		12	0
	Rural	*0*	*0%*	*0*	*0%*	*2*	*33%*	*5*	*26%*	*3*	*0*
	Urban	*0*	*0%*	*0*	*0%*	*4*	*67%*	*14*	*74%*	*9*	*0*
12. MAHEC/Mission Health System, Hendersonville	**Total**	3		1		2		23		17	0
	Rural	*1*	*33%*	*0*	*0%*	*1*	*50%*	*4*	*17%*	*2*	*0*
	Urban	*2*	*67%*	*1*	*100%*	*1*	*50%*	*19*	*83%*	*15*	*0*
13. Camp LeJeune Naval Hospital	**Total**	0		0		0		5		5	0
	Rural	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0*
	Urban	*0*	*0%*	*0*	*0%*	*0*	*0%*	*5*	*100%*	*5*	*0*
14. Other NC Residency Program	**Total**	0		0		6		21		13	1
	Rural	*0*	*0%*	*0*	*0%*	*1*	*17%*	*2*	*10%*	*1*	*0*
	Urban	*0*	*0%*	*0*	*0%*	*5*	*83%*	*19*	*90%*	*12*	*1*
99. Non-NC Residency Program	**Total**	869		151		8,333		16,460		4,401	688
	Rural	*214*	*25%*	*16*	*11%*	*1,078*	*13%*	*2,615*	*16%*	*897*	*86*
	Urban	*650*	*75%*	*134*	*89%*	*7,223*	*87%*	*13,768*	*84%*	*3,475*	*601*
NC RESIDENCY PROGRAM TOTALS	**Total**	293		85		3,149		7,409		2,536	592
	Rural	*44*	*15%*	*10*	*12%*	*254*	*8%*	*821*	*11%*	*364*	*76*
	Urban	*248*	*85%*	*75*	*88%*	*2,885*	*92%*	*6,566*	*89%*	*2,166*	*515*
2016 NC PHYSICIAN TOTALS	**Total**	1,162		236		11,482		23,869		6,937	1280
	Rural	*258*	*22%*	*26*	*11%*	*1,332*	*12%*	*3,436*	*14%*	*1,261*	*162*
	Urban	*898*	*77%*	*209*	*89%*	*10,108*	*88%*	*20,334*	*85%*	*5,641*	*1116*

Source: Program on Health Workforce and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill with data gathered from the North Carolina Medical Board.

Appendix, Table 3.
Resident Retention Five Years After Graduation
for Residents Graduating in 2008, 2009, 2010 or 2011

Residency Specialty Institution	Total Residents	Retention of Residents in North Carolina After Five Years		Retention of Residents in Rural North Carolina After Five Years	
	#	#	%	#	%
Anesthesiology					
Duke University Hospital Program	47	19	40%	0	0%
University of North Carolina Hospitals Program	51	15	29%	2	4%
Wake Forest University School of Medicine Program	54	29	54%	3	6%
Family Medicine					
Carolinas HealthCare System-NorthEast (Northeast-Cabarrus) Program	29	19	66%	1	3%
Carolinas Medical Center Program	31	22	71%	2	6%
Carolinas Medical Center Union Program	8	5	63%	0	0%
Cone Health Program	32	21	66%	1	3%
Duke University Hospital Program	10	4	40%	1	10%
Mountain Area Health Education Center Program - Asheville	31	23	74%	1	3%
Mountain Area Health Education Center Program - Hendersonville	12	3	25%	0	0%
Naval Hospital (Camp Lejeune) Program	29	6	21%	1	3%
New Hanover Regional Medical Center Program	13	7	54%	1	8%
Southern Regional Area Health Education Center/Duke University Hospital Program	24	10	42%	1	4%
University of North Carolina Hospitals Program	33	16	48%	3	9%
Vidant Medical Center/East Carolina University Program	38	17	45%	4	11%
Wake Forest University School of Medicine Program	39	18	46%	0	0%
Womack Army Medical Center Program	22	3	14%	1	5%
Internal Medicine					
Carolinas Medical Center Program	66	28	42%	0	0%
Cone Health Program	29	19	66%	1	3%
Duke University Hospital Program	195	71	36%	0	0%
New Hanover Regional Medical Center Program	35	12	34%	1	3%
University of North Carolina Hospitals Program	119	61	51%	3	3%
Vidant Medical Center/East Carolina University Program	78	26	33%	2	3%
Wake Forest University School of Medicine Program	140	51	36%	2	1%

Appendix, Table 3.
Resident Retention Five Years After Graduation for Residents Graduating in 2008, 2009, 2010 or 2011

Residency Specialty Institution	Total Residents	Retention of Residents in North Carolina After Five Years		Retention of Residents in Rural North Carolina After Five Years	
	#	#	%	#	%
Internal Medicine/Pediatrics					
Duke University Hospital Program	23	9	39%	0	0%
University of North Carolina Hospitals Program	19	12	63%	0	0%
Vidant Medical Center/East Carolina University Program	20	12	60%	3	15%
Neurological Surgery					
Duke University Hospital Program	9	1	11%	0	0%
University of North Carolina Hospitals Program	4	1	25%	0	0%
Wake Forest University School of Medicine Program	5	1	20%	0	0%
Neurology					
Duke University Hospital Program	15	7	47%	0	0%
University of North Carolina Hospitals Program	15	3	20%	1	7%
Wake Forest University School of Medicine Program	16	7	44%	2	13%
Obstetrics and Gynecology					
Carolinas Medical Center Program	22	11	50%	0	0%
Duke University Hospital Program	30	6	20%	0	0%
Mountain Area Health Education Center Program	15	5	33%	1	7%
New Hanover Regional Medical Center Program	16	4	25%	1	6%
University of North Carolina Hospitals Program	25	9	36%	0	0%
Vidant Medical Center/East Carolina University Program	19	9	47%	2	11%
Wake Forest University School of Medicine Program	18	6	33%	0	0%
Pediatrics					
Carolinas Medical Center Program	36	19	53%	0	0%
Duke University Hospital Program	61	24	39%	0	0%
University of North Carolina Hospitals Program	73	32	44%	1	1%
Vidant Medical Center/East Carolina University Program	40	12	30%	2	5%
Wake Forest University School of Medicine Program	52	29	56%	0	0%
Psychiatry					
Duke University Hospital Program	33	13	39%	2	6%
University of North Carolina Hospitals Program	48	33	69%	7	15%
Vidant Medical Center/East Carolina University Program	16	8	50%	2	13%
Wake Forest University School of Medicine Program	13	9	69%	1	8%

Appendix, Table 3.
Resident Retention Five Years After Graduation for Residents Graduating in 2008, 2009, 2010 or 2011

Residency Specialty Institution	Total Residents #	Retention of Residents in North Carolina After Five Years #	 %	Retention of Residents in Rural North Carolina After Five Years #	 %
Surgery					
Carolinas Medical Center Program	17	8	47%	3	18%
Duke University Hospital Program	39	12	31%	0	0%
New Hanover Regional Medical Center Program	12	5	42%	2	17%
University of North Carolina Hospitals Program	51	20	39%	2	4%
Vidant Medical Center/East Carolina University Program	22	4	18%	0	0%
Wake Forest University School of Medicine Program	42	13	31%	1	2%
Urology					
Duke University Hospital Program	12	4	33%	0	0%
University of North Carolina Hospitals Program	8	3	38%	0	0%
Wake Forest University School of Medicine Program	6	2	33%	1	17%

Notes: The values in this table are derived from aggregating the workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice. Rural areas are based on 2015 Office of Management and Budget metropolitan status codes and 2010 US Census Bureau Rural-Urban Commuting Area (RUCA) codes. Rural areas are either a) in a nonmetropolitan county or b) in an area within a metropolitan county that has a RUCA code of 4 or greater.

Source: Program on Health Workforce and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill with data from the Accreditation Council for Graduate Medical Education and the North Carolina Medical Board.

Appendix, Table 4.
Primary Area of Practice Five Years After Graduation for Residents Graduating in 2008, 2009, 2010 or 2011

Family Medicine

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: Family Medicine	Other Specialty
Carolinas HealthCare System-NorthEast (Northeast-Cabarrus) Program	19	78.95%	21.05%
Carolinas Medical Center Program	22	59.09	40.91
Carolinas Medical Center Union Program	5	80.00	20.00
Cone Health Program	21	71.43	28.57
Duke University Hospital Program	4	100.00	0.00
Mountain Area Health Education Center Program	23	78.26	21.74
Mountain Area Health Education Center Rural Program	3	33.33	66.67
Naval Hospital (Camp Lejeune) Program	6	83.33	16.67
New Hanover Regional Medical Center Program	7	71.43	28.57
Southern Regional Area Health Education Center/Duke University Hospital Program	10	80.00	20.00
University of North Carolina Hospitals Program	16	75.00	25.00
Vidant Medical Center/East Carolina University Program	17	64.71	35.29
Wake Forest University School of Medicine Program	18	88.89	11.11
Womack Army Medical Center Program	3	33.33	66.67

Internal Medicine

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: General Internal Medicine	Hospitalist	Other Specialty
Carolinas Medical Center Program	28	39.29%	10.71%	50.00%
Cone Health Program	19	21.05	21.05	57.89
Duke University Hospital Program	71	8.45	15.49	76.06
New Hanover Regional Medical Center Program	12	16.67	25.00	58.33
University of North Carolina Hospitals Program	61	6.56	18.03	75.41
Vidant Medical Center/East Carolina University Program	26	11.54	34.62	53.85
Wake Forest University School of Medicine Program	51	23.53	7.84	68.63

Pediatrics

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: General Pediatrics	Other Specialty
Carolinas Medical Center Program	19	84.21%	15.79%
Duke University Hospital Program	24	45.83	54.17
University of North Carolina Hospitals Program	32	34.38	65.62
Vidant Medical Center/East Carolina University Program	12	83.33	16.67
Wake Forest University School of Medicine Program	29	65.52	34.48

Internal Medicine-Pediatrics

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: Internal Medicine	General Pediatrics	Other Specialty
Duke University Hospital Program	9	0.00%	22.22%	77.78%
University of North Carolina Hospitals Program	12	16.67	25.00	58.33
Vidant Medical Center/East Carolina University Program	12	33.33	25.00	41.67

General Surgery

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: General Surgery	Other Specialty
Carolinas Medical Center Program	8	62.50%	37.50%
Duke University Hospital Program	12	25.00	75.00
New Hanover Regional Medical Center Program	5	40.00	60.00
University of North Carolina Hospitals Program	20	30.00	70.00
Vidant Medical Center/East Carolina University Program	4	25.00	75.00
Wake Forest University School of Medicine Program	13	15.38	84.62

Obstetrics and Gynecology

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: General Obstetrics and Gynecology	Other Specialty
Carolinas Medical Center Program	11	100.00%	0.00%
Duke University Hospital Program	6	66.67	33.33
Mountain Area Health Education Center Program	5	100.00	0.00
New Hanover Regional Medical Center Program	4	100.00	0.00
University of North Carolina Hospitals Program	9	88.89	11.11
Vidant Medical Center/East Carolina University Program	9	100.00	0.00
Wake Forest University School of Medicine Program	6	100.00	0.00

Psychiatry

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: General Psychiatry	Pediatric Psychiatry	Other Specialty
Duke University Hospital Program	13	92.31%	7.69%	0.00%
University of North Carolina Hospitals Program	33	57.58	42.42	0.00
Vidant Medical Center/East Carolina University Program	8	87.50	12.50	0.00
Wake Forest University School of Medicine Program	9	88.89	0.00	11.11

Anesthesiology

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: Anesthesiology	Other Specialty
Duke University Hospital Program	19	78.95%	21.05%
University of North Carolina Hospitals Program	15	66.67	33.33
Wake Forest University School of Medicine Program	29	68.97	31.03

Neurology

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: Neurology	Other Specialty
Duke University Hospital Program	7	85.71%	14.29%
University of North Carolina Hospitals Program	3	100.00	0.00
Wake Forest University School of Medicine Program	7	100.00	0.00

Neurosurgery

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: Neurosurgery	Other Specialty
Duke University Hospital Program	1	0.00%	100.00%
University of North Carolina Hospitals Program	1	100.00	0.00
Wake Forest University School of Medicine Program	1	0.00	100.00

Urology

Institution	Number of Residents in North Carolina After Five Years	Percent of Residents in North Carolina After Five Years by Primary Area of Practice: Urology	Other Specialty
Duke University Hospital Program	4	100.00%	0.00%
University of North Carolina Hospitals Program	3	100.00	0.00
Wake Forest University School of Medicine Program	2	100.00	0.00

Notes: The values in this table are derived from aggregating the workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice.

Source: Program on Health Workforce and Policy, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill with data from the Accreditation Council for Graduate Medical Education and the North Carolina Medical Board.

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