Report to the Board of Governors
University of North Carolina System

2018 UPDATE:
PRIMARY CARE EDUCATION PLANS

From

NC Schools of Medicine
Nurse Practitioner and Physician Assistant Programs
North Carolina Area Health Education Centers (AHEC) Program

This report is submitted to the Board of Governors of the University of North Carolina in response to General Statute 143-613 as contained in House Bill 230 passed in the 1995 session of the North Carolina General Assembly.

April 2018

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

The General Assembly also mandated that the N.C. Area Health Education Centers (AHEC) Program develop a plan to expand the number of primary care residency positions. Finally, the legislature mandated that a monitoring system be developed by the Board of Governors to report on specialty selection by medical students at graduation and five years after graduation.

In 1994, the four schools of medicine and the N.C. AHEC Program submitted primary care educational plans for increasing the percent of medical school graduates choosing primary care residency programs and subsequently generalist practice. General Statute 143-613 as contained in House Bill 230 passed in the 1995 session of the North Carolina General Assembly requires an update of these plans beginning in 1996 and every two years thereafter. Programs for physician assistants, nurse practitioners and nurse midwives were also required to submit plans with strategies for increasing the percentage of graduates entering primary care and to be updated on the same timeline.

The plans of the four schools built upon the unique missions and programs of the schools. Although specific activities differ between the schools, they all implemented initiatives in similar areas in order to increase the percentage of graduates choosing careers in primary care. In each case, the schools also built upon their long-standing relationships with the AHEC Program in order to conduct increased medical student and primary care residency training in community settings.

Though not required, we have added the report from Campbell University Jerry M. Wallace School of Osteopathic Medicine.

Report to the Board of Governors

of

The University of North Carolina

Primary Care Medical Education Plan Update

From

Campbell University
Jerry M. Wallace School of Osteopathic Medicine
(CUSOM)

March 2018

Respectfully submitted by:

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1. Introduction

It is evident from published data that North Carolina, with a population of 10.39 million people, is one of the fastest-growing states in the nation. The population increase and diminishing supply of physicians have exacerbated the critical need for additional primary care physicians in North Carolina. According to findings published online by the Association of American Medical Colleges Center for Workforce Studies (AAMC 2016), North Carolina ranked 29th out of 50 states with 249.3 physicians per 100,000 population, below the national median of 257.6 North Carolina ranked 33rd out of 50 states with 85.2 active primary care physicians per 100,000 population. The national median was 90.8 primary care physicians per 100,000 population (AAMC 2016). According to the same report by the AAMC, there were 25,295 active physicians in North Carolina. Twenty-seven percent of North Carolina physicians were age 60 or older. Nationally, only 11 percent of physicians practice in rural areas (NCSL). Sixty percent of DOs in active practice are primary care physicians (2014 Osteopathic Medical Profession Report) and 27% of DOs were in practice for family medicine/general practice versus 11.6% of their allopathic counterparts (AAMC Active Physicians by Specialty – 2015).

Campbell University carefully studied this information along with the North Carolina Institute of Medicine's "Providers in Demand: North Carolina's Primary Care and Specialty Supply" (2007), which detailed the status of healthcare providers in North Carolina. Findings from the COGME 20th Report "Advancing Primary Care" (2010) and the 2006 U.S. Department of Health and Human Services Health Resources Service Administration (HRSA) report, "Physician Supply and Demand: Projections to 2020" (2006) documented a significant shortage of primary care physicians throughout the United States. The need for additional specialty physicians in North Carolina was also apparent. The North Carolina Institute of Medicine (2007) acknowledged that physician growth would likely remain stable over the next 20 years, but the population growth would outpace the growth in the physician population.

While the focus of physician workforce research had been on primary care physicians in the rural and underserved areas, the need also included many other medical specialties, such as general surgery, OB/GYN, dermatology, and geriatrics. The American College of Surgeons conducted its own studies and noted a growing trend in the shortage of general surgeons in the United States (2009). This was very noticeable in North Carolina where there were 26 counties with no general surgeons with a majority of these counties located in eastern North Carolina. Additionally, according to the Council on Graduate Medicate Education (COGME) (2010), the quality of healthcare is linked closely to patients receiving adequate primary care. Mortality decreases with 1.44 fewer deaths per 10,000 population for each primary care physician added to the workforce.

Based on this information, Campbell University established the Jerry M. Wallace School of Osteopathic Medicine (CUSOM), making it the 5th medical school in North Carolina. Campbell University believed that the osteopathic medical school model of training medical students in community-based clinical sites, including underserved areas, was best suited for meeting the mission and vision of its medical school. CUSOM opened its doors to 162 medical students in August 2013, with the goal of adding physicians who are deeply convicted and care about the needs of the population in North Carolina and will be willing to stay and make a difference in the rural and underserved areas of our state.

2. Admissions / Enrollment

The mission of CUSOM is to educate and prepare community-based osteopathic physicians in a Christian environment to care for the rural and underserved populations in North Carolina, the southeastern United States, and the nation. CUSOM has adopted admissions policies and criteria designed to meet its mission and vision.

CUSOM faculty, staff and students value**:** teamwork, leadership, professionalism, integrity, diversity, and the ethical treatment of all humanity.

The goals of the CUSOM Office of Admissions are to

1. Recruit osteopathic medical students who are committed to serving the rural and underserved areas in North Carolina, the Southeastern United States, and the nation.

2. Recruit a diverse student body.

3. Recruit students from North Carolina, the southeastern United States, and the nation.

4. Facilitate and promote the selection of osteopathic medical students who will become successful practitioners in the art and science of osteopathic medicine using the most current research in clinical and basic science.

5. Recruit students from or who reside in rural communities.

CUSOM Admissions Process

The Office of Admissions ensures qualified students are selected for matriculation to the Doctor of Osteopathic Medicine Program at Campbell University.

CUSOM is committed to selecting applicants who are an asset to the profession of osteopathic medicine. The goals of the admissions process include considering each applicant's interest in serving rural and underserved populations.

Our target area based upon our mission statement is North Carolina and the Southeastern United States, which is defined as South Carolina, Virginia, Alabama, Florida, Georgia, Kentucky, Mississippi, Tennessee, and West Virginia.

The table below details the number of students applying to CUSOM from North Carolina and the southeast for the past six years, as of March 7, 2018.

Year of Matriculation	Total Number of Applicants	Total Number of NC Applicants	Total Number of NC Matriculants	Total Number of SE US Applicants	Total Number of SE US Matriculants	Total Number of Matriculants
2013	3,836	259	41	1,268	76	162
2014	4,529	281	43	1,019	70	162
2015	5,211	328	40	941	72	162
2016	4,884	336	58	1,149	87	162
2017	3862	301	41	993	84	162
2018*	3953	378	N/A	1012	N/A	162

*Numbers current as of March 7, 201

3. Curriculum

First and Second Year Curriculum

The CUSOM curriculum is specifically designed to prepare students for practice in areas with limited resources. Clinical Skills training begins in the first week and continues throughout the four years, with an emphasis on patient-centered care and excellence in physical diagnosis. Hands-on training in osteopathic manipulative treatment also runs throughout the first two years. Early clinical experiences connect first- and second-year students with patients and expose them to care in a variety of settings. Optional international and domestic mission trips provide opportunities to experience caring for patients in settings of desperate need. Regardless of their choice of specialty, CUSOM graduates will be prepared to diagnose and care for patients in rural and underserved areas, which may have limited diagnostic imaging or subspecialty treatment.

Third and Fourth Year Curriculum

CUSOM provides students with a seamless transition from the classroom to clinical practice. The clinical curriculum provides training on a rotational basis at a variety of sites in North Carolina. Students are required to successfully complete their core clinical clerkships at affiliated sites. CUSOM students in years three and four are assigned to regional hospitals throughout North Carolina where they complete four-week clinical rotations within hospitals, in ambulatory practices, and in geriatric facilities. All students spend time in rural settings for an underserved care experience.

The goals of the clinical years include:

- Application of didactic knowledge to supervised clinical practice
- Development and sharpening of clinical problem-solving skills
- Expansion and development of the medical fund of knowledge
- Further development and refinement of history taking and physical examination skills
- Evaluation of oral presentations and written documentation of patient encounter
- Development of a deeper understanding of the physician's role in health care delivery
- Preparation for the Comprehensive Osteopathic Medical Licensing Examination (COMLEX) and the United States Medical Licensing (USMLE) National Board Examination
- Further development of interpersonal skills and professionalism necessary to function as part of the interprofessional medical team

Third and fourth year clinical rotations, as detailed below, are designed to equip students with the skills necessary to pursue careers in primary care or medical and surgical sub-specialties.

Third Year Rotations

- Internal Medicine I, II (8 weeks)
- Medical Selective (4 weeks)
- Surgery (4 weeks)
- Obstetrics/Gynecology (4 weeks)
- Family Medicine (4 weeks)
- Pediatrics (4 weeks)
- Psychiatry/Behavioral Sci. (4 weeks)
- Rural/Underserved (4 weeks)
- Simulation Medicine (4 weeks)
- Medical/Surgical Selective (4 weeks)
- Cumulative Review/Testing (4 weeks)

Fourth Year Rotations

- Residency Development (4 weeks)
- Medical Selective (4 weeks)
- Primary Care Selective (4 weeks)
- Surgical Selective (4 weeks)
- Geriatrics (4 weeks)
- Emergency Medicine (4 weeks)
- Electives I, II, III, IV, V (20 weeks)

Students are required to complete a Sub-Internship (Sub I) during one of their selective, one of their elective, or the Emergency Medicine month. Students are encouraged to choose their elective and selective rotations to afford the most comprehensive clinical experience. Students will be required to complete the fourth year selective rotations at affiliated sites. These selectives are a mix of inpatient and outpatient experiences. Students may choose from the following list of selective rotations:

Medical Selective: General Internal Medicine or any of the subspecialties recognized by the American Osteopathic Board of Internal Medicine as approved by Associate Dean for Clinical Affairs.

Primary Care Selective: General Internal Medicine, Family Practice, Pediatrics, Obstetrics/Gynecology, Geriatrics, Psychiatry, Primary Care Sports Medicine, and Osteopathic Manipulative Medicine.

Surgical Selective: General Surgery or any Surgical Subspecialty recognized by the American College of Osteopathic Surgeons or as approved by Associate Dean for Clinical Affairs.

Clinical Rotation Sites & Capacity

CUSOM has 6 regional clinical campuses throughout North Carolina with adequate capacity to meet the need for student clinical rotations.

Residency Programs

CUSOM is committed to creating sufficient residency positions for its graduates. Because physicians have a tendency to enter practice near their residency training, increasing residency opportunities within North Carolina will add to the likelihood of CUSOM graduates staying within the state permanently. In a 2012 JAMA article, Sarah Brotherton suggested that "50% of residency program graduates practice within 50 miles of where they trained." CUSOM has worked closely with the Osteopathic Medical Network of Excellence in Education (OMNEE) to establish a relationship to facilitate the development, growth, and maintenance of graduate medical education positions for CUSOM graduates. To accomplish this, CUSOM has several important initiatives to ensure adequacy:

- Development of a Graduate Medical Education (GME) Department within the medical school with an Associate Dean for Graduate Medical Education and a Director of Graduate Medical Education to assist in program development.

- Development of Regional Training sites for medical students. Each region will have a Regional Associate Dean/ Vice President for Medical Education to provide academic as well as operational leadership and accountability to ensure development of quality graduate medical education programs.

- Development of agreements with key regional partners for the development of residency programs.

- Establishment of a GME committee that brings together the resources of the school with the regional leaders in graduate medical education to create and utilize tools such as the Graduate Medical Education Program Timeline and Responsibility List.

- The CUSOM Associate Dean for Research serves as a member of the OMNEE Research Committee.

- Achievement of Initial accreditation through ACGME for 6 programs, and with Pre-accreditation status through the ACGME on another 9 programs to date. Application for 1 new program has been submitted de novo ACGME and is pending review, and the remaining ACGME applications are anticipated to be submitted prior to December 2018.

- Approval as the first osteopathic medical school to receive accreditation as an ACGME Sponsoring Institution.

- Development of resources to help our medical students successfully transition into residency training programs

One of our first CUSOM community partners in developing Graduate Medical Education (GME) is Southeastern Health, a large rural healthcare organization with over 400 acute and long-term care beds, an emergency department that cares for approximately 70,000 visits annually, 40 ambulatory offices, eight of which are defined as rural health clinics.

Southeastern Health in Lumberton, North Carolina is located in one of the most healthcare-challenged areas in the nation, with Robeson County ranking 97th out of 100 NC counties in health status of its population. Additionally, the three surrounding counties that Southeastern Health also serves are in the lowest quartile for healthcare in the state. This contributes to the wide array of patient pathology upon which the medical students, residents, and fellows are currently being trained.

In 2014, Sampson Regional Memorial Hospital successfully launched a Dermatology Program. In 2015, Sampson Regional Medical Center launched a Traditional Rotating Internship program as well as a Family Medicine program. Also in 2015, Southeastern Health successfully launched three residency programs: Emergency Medicine, Internal Medicine, and Family Medicine.

In 2016, Harnett Health launched 3 programs: Internal Medicine, Family Medicine, and a Traditional Rotating Internship. Also in 2016, Novant Health out of Huntersville, NC began taking residents into their Family Medicine program.

In 2017, Southeastern Health began its Traditional Rotating Internship program, and Cape Fear Valley launched Traditional Rotating Internship, Internal Medicine, Emergency Medicine, OB/GYN, and Surgery programs and has become the largest teaching site in the Campbell network.

CUSOM is also working to develop GME opportunities on campus. Campbell University is an NCAA Division I institution with multiple athletic programs. CUSOM accepted its first sports medicine fellow in 2014 and has expanded to 2 fellows in 2016. CUSOM has received approval for a Neuromusculoskeletal Medicine / Osteopathic Manipulative Medicine (NMM/OMM) residency program and we anticipate accepting our first resident in 2018.

Campbell University is committed to advancement of Scholarly activity among the faculty and residents in our programs. In February 2018, Campbell University held the first annual Resident Research and Educational Symposium. This was a regional event, and demonstrated Patient Safety, Quality Improvement, and original research with over 70 project entries representing more than 150 of the faculty and residents.

Research

Research is fundamental to, and a prerequisite for excellence in teaching and the creation of a scholarly atmosphere for learning. CUSOM recognizes the critical role for developing its

research capacity in order to continue to attract and retain top-tier faculty and students, thereby training students for productive careers in osteopathic medicine, biomedical research, and in making valuable contributions to society.

Students have been involved in scholarly activity, and CUSOM has received multiple accolades since the submission of the last report.

- CUSOM students and faculty have over 10,000 square feet of research space in which to work among Levine Hall, Smith Hall, and main campus.

- CUSOM has received over $1 million of NIH and regional research funding, including Campbell's first NIH RO1 grant

- 75% of the Class of 2017 reported activity in scholarship
    - 27 manuscript co-authors
    - 40 oral presentations
    - 73 poster presentations

Student research is especially active in the summer. Some of the more recent projects include

- "Expression of tNASP splice variant protein in malignant cancer samples"

- "Synthetic cannabinoid agonist-induced cardiotoxicity"

- "Cytokine/chemokine profile of macrophages using a viral-bacterial coinfection model"

- "CUSOM Student Demographics with Affective and Cognitive Empathy Scores"

- "Role of Immune Response in the Susceptibility to Phthalate-Induced Inhibition of Steroidogenesis in Leydig Cells"

4. Evaluation / Survey Data

The mission of CUSOM includes training physicians to care for rural and underserved populations in North Carolina and beyond, our desired outcomes include:

- Increased numbers of graduates practicing in primary care or target needed specialties such as general surgery in target area
- Increased numbers of graduates practicing in areas of need
- Increased numbers of graduates remaining in North Carolina
- Increased numbers of students and graduates choosing to participate in medical missions
- Improved physician supply and health care access in NC
- Improved health status measures for North Carolina

CUSOM has a comprehensive assessment plan which consists of multiple measures to ensure that not only standards are being met but also overall outcomes related to the mission and vision of the institution. We just graduated our inaugural class in May 2017 and are currently in the process of tracking residency completion and practice plans.

Of the 151 eligible Match participants from the Class of 2017, all of them were successful in the Match. Fifty three percent (53%) went into a primary care residency (Internal Medicine, Family Medicine, Pediatrics, Ob/Gyn). Seventy four percent (74%) entered into a residency program of one of our target specialties, including Internal Medicine, Family Medicine, Emergency Medicine, Pediatrics, General Surgery, Psychiatry, and Ob/Gyn. Twenty five (25) students matched into residency programs in North Carolina while fifty two (52) overall matched into residency programs in CUSOM's target region of the Southeast United States.

Items most related to measuring success in establishing primary care physicians will be tracked via graduation surveys and final surveys of career goals. They will be followed several years post-graduation (surveys of students and residency program directors 1, 3, 5, 10 years post-graduation to monitor and track how CUSOM students are doing, where they are practicing, and in what discipline).

These assessment tools will measure the extent to which the CUSOM curriculum is successfully achieving its desired learning outcomes and preparing graduates for GME. Longer-term measurements will be needed to assess CUSOM's success in positively impacting healthcare access and quality in North Carolina. These results will be shared with various institutional committees as well as with appropriate accrediting bodies, such as the Commission on Osteopathic College Accreditation (COCA) and the Southern Association of Colleges and Schools (SACS), as well as with local and state agencies like the NC AHEC.

5. Faculty Development

PRECEPTOR DEVELOPMENT 2016 - 18

On-campus workshops

CUSOM-based weekend programs bring clinical faculty together to learn more about working with medical students and residents. The annual Clinical Teaching Conference has been developed as an expansion of previous preceptor workshops, and now incorporates physician and PA faculty working with residents, medical students, and/or PA students in community-based sites. In October of 2018, community-based pharmacy faculty will join in this collaborative interprofessional program. Conference topics are selected based on input and requests from the community-based faculty. In 2017, small-group concurrent sessions included discussions and skill-building activities on such topics as:

A. The One Minute Preceptor
B. Dealing with teaching challenges
C. Introduction to Osteopathic Manipulative Medicine
D. Incorporating multiple types of learners in a busy practice
E. Documentation responsibilities in the age of Electronic Health Records
F. Incorporating scholarly activity in Graduate Medical Education
G. Orienting learners to your practice
H. Mentoring medical students in the clinical years
I. Evaluating learner performance

A hands-on lab experience enabled MD faculty to both experience and attempt manipulative techniques, to improve their understanding and ability to supervise DO medical students. Additional CME sessions enabled participating clinicians to meet the new state requirement for continuing education on management of opioids.

Site-based programs

A program of site-based faculty development workshops has been in place since early 2015. CUSOM organizes its clinical sites into several regions. An annual needs assessment survey of all off-campus faculty provides data on self-identified preceptor needs for training, by region. The Associate Dean for Faculty Development and Medical Education works with leadership at each of the regional sites to identify desired programs and schedule them at times convenient to the local faculty. Examples of recent programs include:

- Writing Letters of Recommendation, February 25, 2016, Novant Rowan
- Handling Multiple Student Assignments, April 4, 2016, Wayne Memorial
- Incorporating Students Into a Busy Practice, April 20, 2016, Cape Fear Valley Medical Center
- Incorporating Students into Your Practice, January 12, 2017, New Bern
- The Troubled Resident, February 15, 2018, Cape Fear Valley Medical Center

A collection of online resources on clinical education (http://www.teachingphysician.org/) has also been made available to all CUSOM faculty, both on- and off-campus. A password-protected Intranet site provides additional resources specific to CUSOM clerkships and students. Clinicians holding CUSOM faculty appointments also are eligible to receive (upon request) access to a wide range of resources through the Campbell University Libraries.

Future directions

A graduate program in medical education is under development. A pending federal grant proposal would create a fellowship program and provide stipend support to community-based physicians and PAs in primary care practice to be trained as Primary Care Champions. This program, if funded, will develop clinician expertise in leadership, practice transformation, and education, to expand capacity and improve quality of health care and medical education in rural and underserved communities. Several practices have committed to participate, located in Harnett, Cumberland, Robeson, and Wayne counties.

6. Summary

In its fifth year, CUSOM has implemented initiatives that will address needs for primary care in the rural and underserved areas of North Carolina and the Southeastern United States. The admissions process and entire four-year curriculum have been strategically designed to provide a foundation for skilled clinical practice and dedication to service. Residency programs are continuing development along with fellowship positions in primary care with the hopes that our students who were born and raised in rural and underserved areas will stay in North Carolina to establish their own practices. We look forward to further establishing and continuing relationships with local hospitals and agencies so our students will demonstrate measureable competencies and graduate ready for practice within the ever-changing climate of 21st century healthcare in the United States

2018 Update: Primary Care Education Plan
Duke University School of Medicine

Report to the Board of Governors of the Consolidated University of North Carolina

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March 2018

A report in response to General Statue 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina Assembly

2018-Update: Primary Care Education Plan

Duke University School of Medicine

In 1994, the Duke University School of Medicine submitted an educational plan with the goal of encouraging students to enter the primary care disciplines of general internal medicine, general pediatrics, family medicine, and obstetrics/gynecology.

Support for these innovations has come from the North Carolina AHEC, a training grant from the U.S. Health and Human Services Grants for predoctoral education in family medicine, from the NC Academy of Family Practice, the Josiah Mercy, Jr. Foundation, the Fullerton Foundation, Hewlett Packard, the Duke Endowment, donations and substantial support from the Office of Medical Education at Duke.

One measure of our programs to train individuals for a career in primary care is the distribution of graduates across residencies. Duke graduates enter residencies that can lead to careers in primary care.

PROGRAM	2011	2012	2013	2014	2015	2016	2017
Family Practice	3	1	3	0	0	6	3
Internal Medicine	16	18	25	23	18	19	24
Preliminary	12	15	22	13	14	9	10
Medicine/Pediatrics	1	2	1	0	0	4	1
Obstetrics & Gynecology	3	4	5	3	7	4	5
Pediatrics	8	11	8	4	10	5	7
Total Graduates	98	83	106	99	89	98	108

Note: the proportion of graduates entering primary care includes one year Internal Medicine residencies expected to lead to sub-specialty training.

The Generalist Activities include:

1. Improving Community Relations to address disparities in health care

Duke's modern history with community engagement began in 1996, when leadership and faculty of the Duke Department of Community and Family Medicine and the School of Nursing worked with the leadership of Durham County's Health and Social Services Departments, the local federally qualified health center (FQHC), and its then-rival hospital, Durham Regional Hospital, to initiate a series of discussions about improving the health of Durham's low-income populations.

In 1998 CFM created the Division of Community Health (DCH) to work with communities in Durham and across North Carolina to build innovative inter-professional models of care to improve health at the individual and at the population level. The models of care utilized

multidisciplinary teams of social service (MSWs, LCSWs, family counselors and psychologists) and health care providers (Pharm Ds, RDs, PAs, NPs, OTs and PTs) along with non-licensed community health workers; and placed primary care and care management services in accessible locations for individuals and families - in their homes, in schools, and in neighborhoods. Examples of DCH's varied programs include:

- Three neighborhood clinics planned with their communities in partnership with Durham's FQHC (Lincoln Community Health Center), seeing over 15,000 patient encounters annually. 72% of the patients served are uninsured.
- The Just for Us Program is a multi-agency, inter-professional team providing in-home primary care, nutrition, occupational therapy, and case management to elderly and/or disabled residents of Durham living in 13 public/subsidized housing centers in Durham County, planned with the senior centers and the seniors. The program provides more than 1,000 patient visits annually.
- A school-based wellness center located in Southern High School, planned with Durham Public Schools and the community, generates over 1,500 encounters per year. The Division also collaborates with the Durham County Health Department to provide well child visits and immunizations in five Durham elementary schools.
- Local Access to Coordinated Health Care (LATCH) a care management program that draws on the resources of multiple agencies including the County Departments of Health and Social Services and Lincoln Community Health Center that has served more than 22,000 uninsured Durham residents since its inception.
- Healthy Futures is a new, innovative care delivery model provided by the Durham County Department of Public Health, in partnership with Durham Public Schools and Duke Health for children residing in Durham County. Some of the services provided by the program include immunizations, school physicals, health checks, and visual/hearing screenings. Healthy Futures enhanced role nurses also provide nutrition, health and safety counseling; and family referrals are made to their medical home and other agencies for additional support with dental and mental health concerns.
- The Durham Crisis Collaborative is a group of agencies working together to improve the care for people with complex behavioral health needs. The Collaborative plans and provides services based on patients' needs, connecting them with the best resources available to assist in improving the quality of care, reducing unnecessary services, and reducing visits to the ED. The Collaborative is comprised of multiple community agencies including Alliance Behavioral Health, City of Durham, Duke University Health System, Project Access of Durham County, Durham Police Crisis Intervention Team, Central Regional Hospital, Freedom House Recovery Center, Housing for New Hope, and Lincoln Community Health Center. In addition, various Durham County agencies are also involved, including the Criminal Justice Resource Center, Department of Public Health, Department of Social Services, and Emergency Medical Services.

- Benefits enrollment counseling (BEC). In FY 16 the division of community health launched the benefits enrollment counseling program (BEC) with grant funding through the national council on aging to help seniors and those with disabilities and a limited income, find and enroll in all the benefits programs for which they are eligible. The goal of the service is to enable older adults to enjoy life and live independently in their homes and communities for as long as possible. For those with limited income and resources, additional support can be critical in maintaining their health and avoiding costly hospitalizations. The benefits provide clients served with access to healthy food, needed medical care and prescriptions, as well as other supportive services. The benefits also provide a community economic stimulus, as benefits are spent locally in pharmacies, grocery stores, utility companies, and health care providers. To increase the reach of the program beyond grant funding, BEC staff train volunteers (from partner community based organizations and Duke) to assist clients in Durham, Granville and Person counties. Last year, BEC screened 1,340 individuals. 1,199 of those individuals were eligible to receive assistance from BEC to find and apply to supportive benefits programs. BEC assisted these individuals in completing 4,773 benefit applications.
- The Chronic Pain Initiative was developed to address accidental overdoses and improve clinicians' safe prescribing of opioids. The Initiatives includes distribution of Naloxone in pharmacies, and public education of the merits of Naloxone. Duke University Health System launched a Safe Opioid Prescribing Task Force as part of its PNT Committee. This Task Force is currently disseminating to providers new regimens related to prescribing of opioids in line with the State Medical Board and the CDC guidelines.
- **SSI/SSDI Outreach, Access, and Recovery (SOAR)** is a program designed to increase access to SSI/SSDI for *eligible adults who are experiencing or at risk of homelessness* and have a mental illness, medical impairment, and/or a co-occurring substance use disorder. Duke Health has two SOAR workers and over the past three years have qualified 122 Durham residents for eligible services and SSI income.

  In addition, the Division operates the Northern Piedmont Community Care Network (NPCC), part of the Community Care Program of North Carolina. NPCC provides care management services for more than 70,000 Medicaid enrollees across Durham, Franklin, Granville, Person, Vance and Warren counties. The NPCC network links and coordinates services for 53 primary care practices, five hospitals, and local departments of social services, health and mental health across the six-county region.

  All of these programs began with our strategy for community engagement. Together, with our partners, we ask about and listen to concerns (literally going door to door in neighborhoods), analyze and share healthcare utilization and costs, explore barriers to care, identify partner needs and resources, plan/redesign services, track outcomes, and share accountability. Our evaluation data demonstrated that these programs have been improving hospitalization rates and emergency department use, and fulfilling unmet patient needs for meaningful access to primary care, and support in managing their own health.

2. Development of primary care faculty

A large group of primary care faculty serve on the Medical School's Curriculum, Admissions, and Promotions Committees as well as representation on both Graduate Medical Education and Continuing Medical Education Committees.

The network of primary care practices added to Duke is now playing a strong role teaching medical and PA students. NCAHEC ORPCE teaching sites have recently played a smaller role in primary care teaching as the competition for primary care teaching sites has increased with more learners in NC.

3. Development of Research Programs in Primary Care

Research efforts in primary care have continued in the areas of treatment of common illness, health outcomes, general health status, and health services delivery. Such research is being carried out in the Health Services Research Program at the Veteran's Administration Medical Center, the Epidemiology Program in the Department of Psychiatry and the Aging Center, the
Clinical Epidemiology and Biostatistics Program, and the Department of Community and Family Medicine (in Divisions of Community health and Family Medicine and recently also in the Physician Assistant Division). The Health Promotion and Disease Prevention Center at the Veteran's Administration Medical Center is active in the medical school curriculum. Many students participate in primary care research in their third year at Duke through the combined MD/MPH program, the Epidemiology, Health Service and Health Policy Study Program, the Global Health Track and the Masters of Health Science in Clinical Research degree, and the Duke Center for Community Health Improvement. There are also numerous primary care research activities in the Global Health Institute, and the new Department of Population Health Sciences also promises to be a fertile ground for primary care research projects and training.

4. Admissions and Premedical Preparation

Duke is proud to be a site of the AAMC's Robert Wood Johnson-funded Summer Medical Enrichment Program. This program sponsors college sophomores and juniors from disadvantaged backgrounds to attend a six-week program introducing them to a variety of programs associated with health professions. This introduction includes experiences related to primary care fields as well as shadowing programs.

5. Financial Aid

The Primary Care Leadership Track awards students up to $40,000 to replace need-based loans taken out by the student in the fourth year of medical school. The funds are awarded once the students match in one of the approved Primary Care fields. Students will be tracked for five years post-graduation. Those who choose to change to a specialty not designated Primary Care will then need to repay the scholarship at seven per cent interest.

Duke continues to aggressively secure financial aid for student and identifies scholarships available for those interested in Primary Care. Primary Care financial aid programs are overseen by the Assistant Dean of the Primary Care Program in coordination with the Financial Aid Office to help ensure that eligible students are aware of the opportunities.

Duke participates with the Department of Health and Human Services to pursue grant and loan programs to benefit students interested in Primary Care. Duke continuously researches scholarships that would provide assistance to those interested in Primary Care.

6. Medical School Curriculum

A. Clinical Skills Foundation Course

The Clinical Skills Foundation course exposes all students at Duke to early ambulatory medicine in year one and provides much of the ambulatory care core training at Duke preclinically and during the clinical year. Students are taught the basic skills they need to be effective in the ambulatory setting. The course is still required for first, second and third year students.

All third or fourth year students are required to have a longitudinal ambulatory care experience. Ambulatory experiences are included as part of several core clerkships.

B. Primary Care Leadership Track

The Primary Care Leadership Track (PCLT) launched in 2011, is a four-year program to prepare physicians with knowledge of the health care system, understanding of longitudinal chronic illness care, and skills to work effectively in teams to care for patients and improve systems of care. To date 48 students have matriculated into the program. These students will enter residency prepared to engage with communities and practices to help improve health outcomes. The curriculum of the PCLT builds on a longstanding partnership between Duke and the Durham community to understand the causes of health disparities, create a strong research focus on community engagement, and redesign clinical programs to improve health outcomes. Students committed to primary care are specifically recruited and participate in an innovative 4year curriculum designed to support their interest and develop skills needed for community-engaged, population-based practice, and leadership positions. As of May, 2018, there will be 23 graduates of the program. Eleven will have matched residencies in Family Medicine, two in general internal medicine, one in med/peds, and six in pediatrics. One matched in psychiatry and 2 in Obstetrics.

7. Extracurricular Activities

A. Primary Care Progress Chapter

Duke has had a local chapter of Primary Care Progress. Primary Care Progress is a growing network of medical providers, health professional trainees, policy pundits, advocates, and educators united by a new vision for revitalizing the primary care workforce. The group works through strategic local advocacy that promotes primary care and transforms care delivery and training in academic settings. Duke and UNC chapters have collaborated on local activities.

B. Student Interest Groups

The Family Medicine Interest Group continues to provide opportunities for all students interested in primary care with a chance to learn primary care clinical skills and share interesting topics. Other interest groups, such as one in pediatrics, are also active.

8. Physician Assistant Program

The Duke PA program, ranked first in the nation, offers longitudinal primary care rotations in several rural/underserved areas of NC. They offer a special scholarship attached to a longitudinal primary care rotation in Mitchell Co. Training primary care PAs is part of their mission statement and is reflected in the admissions recruitment. They are above the national average in terms of the number of graduates who take jobs in primary care.

9. Primary Care Residency Training

Duke continues to have five residency tracks that can lead to the practice of primary care: general internal medicine, general pediatrics, a combined medicine/pediatrics residency, family medicine, and obstetrics/gynecology.

- **Family Medicine Residency Program**
  The Duke Family Medicine Residency program is known for its innovative approach to training in population health and community health. Ranked #9 for 2017, according to US News and World Report, the program is dedicated to training family physicians who are excellent clinicians, leaders and advocates of health care within the community. Besides clinical training in all aspects of Family Medicine, residents complete a three-year Population Health Improvement through Teamwork (PHIT) Curriculum, and they apply what they learn in PHIT in their clinical practice on a daily basis. The faculty have also completed this curriculum, and utilize the skills and knowledge they have gained to produce clinically skilled Family Medicine physicians who have the abilities to lead and collaborate with clinical teams to meet the health care needs of patients and populations.

The program incorporates community-engaged approaches for population health improvement and leadership training. We partner with a variety of local health care and community teams to meet the needs of various individuals, families and populations, with the core goal of reducing health care disparities and improving health. All residents provide continuity of care to patients in the Duke Family Medicine Center and also one half day to one day a week each resident provides care in clinics that address the care of underserved populations: The Walltown Neighborhood Clinic and Lyon Park clinic- a joint program of Lincoln Community Health Center and Duke Community Health, the Veterans Administration primary care clinic, Just For Us -offering in-home medical services to Durham's seniors and adults with disabilities living in Durham's public subsidized housing facilities who have barriers to routine primary care services in the traditional office setting, El Futuro -a mental health agency caring for Latino families- or TROSA a comprehensive, long-term, residential substance abuse recovery program; and Duke Primary Care of Oxford. serving the rural community of Oxford.

The Family Medicine residency program started expanding its size in 2015 from 4/4/4 to 5/5/5 through the support for Graduate Medical Education (GME) Enhancement under Veterans Access, Choice, and Accountability Act (VACAA), and to 6/6/6 starting in 2016 with funding from Duke Primary Care.

For the last 5 years, 60 % of our Family Medicine graduates stayed in North Carolina after graduation (most of them came from other states and stayed). All are practicing Family Medicine. Among these graduates, 15 % did Geriatrics fellowships, 5% did Sports Medicine fellowship and 5% did Obstetric fellowships.

The residency program is planning a rural expansion to Granville and Vance counties with a rural track expected to start recruiting residents in 2020.

B. Ambulatory Care Resident Leadership Track

The Ambulatory Care Leadership Track (ACLT) has been a core part of the Internal Medicine residency program at Duke since 2012. The ACLT is an elective track for second and third year internal medicine residents which serves as a foundation for careers in general medicine leadership, primary care, academic ambulatory subspecialties, research, or education. Residents come together during three ambulatory blocks per year of clinical and didactic small group instruction, including: (1) Expanded clinical options in fields inside and outside of medicine, including primary care, sports medicine, ENT, ophthalmology, dermatology, obesity medicine, as well as all medicine subspecialties; (2) Curricula in teaching and opportunities to teach as a senior resident; (3) Training in population health and practice management; (4) Advocacy and health policy seminars given by faculty in government relations and health policy throughout the year, and an advocacy trip in the spring to both Washington DC and Raleigh, NC, alternating years. The ACLT has evolved significantly since its inception, in response to learner feedback. This is a learner driven experience and a wonderful opportunity to realize house staff's

personal impact on the worlds of clinical medicine, education, leadership, and health policy. The ACLT track will expand to 11 second year residents and 4 third year residents in 2016. It is directed by Dr. Daniella Zipkin with support from Dr. Sharon Rubin and Dr. Alex Cho.

10. Community Practitioner Support

Duke continues to work closely with the other three medical schools in North Carolina and the North Carolina Area Health Education Centers Program (AHEC). Duke continues to coordinate placement of the majority of its community learners with practitioners throughout the state with assistance from the Office of Regional Primary Care Education (ORPCE). The ORPCE staff has continued to be very successful in recruiting, training, and supporting community preceptors in their regions. Duke supports key community practices with teaching resources whenever possible.

11. Tracking Students and Residents

Duke maintains information on training and practice activities of its students and house staff alumni through several sources. Local records are kept of residencies entered and current addresses of those in practice. AAMC provides information about the status of residency training. These data are summarized and forwarded annually to the statewide coordinator at the AHEC central office, who, in turn, reports to the North Carolina State Legislature.

12. "Playbook" to Integrate Primary Care and Public Health

The Department of Community & Family Medicine is in its second phase of being lead organizer of a multi-pronged national effort to encourage, initiate, and support public health and primary care to partner and work together to address multiple determinants of health and improve health outcomes. Funded by the de Beaumont Foundation, in partnership with the Centers for Disease Control and Prevention and HRSA, and assisted by a wide array of national primary care and public health agencies and groups, the Department serves as the home for the Practical Playbook (PPB), which provides tools and resources for communities as well as practitioners and educators in public health and primary care who want to implement practical strategies to improve population health outcomes. The PPB also coordinates and provides technical support for collaborative stakeholders in communities selected by the BUILD Health Challenge, evaluating and disseminating best practices from across the nation for what works and how partners can work together. The Playbook has become the core of a national movement of multisector partnerships working to improve population health, with nearly 600 identified partnerships nationally, and over 64,000 users and over 300,000 hits to the programs at www.practicalplaybook.org. A textbook version was requested by Oxford Press, with close to 4000 copies distributed to date, and an expanded version focused on practical tools, including a section on training, now in development and scheduled for release in November 2018

13. The Duke-Johnson & Johnson Nurse Leadership Program

This program, national in scope, provides advanced practice nurses, specifically nurse practitioners and certified nurse midwives, with a year-long transformational leadership development experience to prepare them to implement change in their practice settings and within the evolving and challenging health care environment. Through its rich leadership and management program content, this professional development program trains the advanced practice nurse to be better able to meet the challenges of the evolving health care environment. There is a specific focus to support advanced practice nurses practicing in community based settings and serving vulnerable populations. Fellows who successfully complete the program will be equipped with the skills and competencies to lead health care teams to increased operational efficiency and improved patient outcomes with a special focus on underserved populations. With a focus on the creation and sustainability of patient-centered practices, the program emphasizes the behaviors of exemplary leaders to enable nurse professionals to identify different types of personal leadership styles and philosophies and learn how to incorporate and expand upon them when directing health care teams.

Summary

Duke continues to be recognized by US World and News Report for training family medicine residents. These rankings recognize the efforts Duke has made in the past two decades to improve training in the primary care specialties.

The Primary Care Leadership track continues to thrive at the medical school, attracting top students from around the country. The Ambulatory Medicine Resident Leadership Track continues to increase the number and skills of medicine residents in ambulatory primary care. The Family Medicine residency is ensuring its graduates have skills that will allow them to be leaders in community health improvement after graduation. Duke is training nurse leaders through the Johnson and Johnson Nurse Leadership program. With the Practical Playbook, Duke is leading a multi-pronged national effort to encourage, initiate, and support public health and primary care to partner and work together to address multiple determinants of health and improve health outcomes. Lessons from the Playbook are taught to residents and students. Duke continues to be active in research areas that impact the health of communities. Duke is more than ever committed to innovations in primary care service, research, and education to meet the health care needs of the public through primary care.

Report to the Board of Governors

University of North Carolina System

2018 Update:

Primary Care Medical Education Plan

Brody School of Medicine East Carolina University

Submitted by:

Mark Stacy, MD, Dean, Brody School of Medicine

Elizabeth G. Baxley, MD, FAAP Senior Associate Dean for Academic Affairs, Brody School of Medicine

March 5, 2018

A report in response to the General Statue 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina Assembly

Introduction

Since the creation of the Brody School of Medicine at East Carolina University by the North Carolina General Assembly in 1975, we have remained true to our legislatively-mandated tripartite mission:

- To educate primary care physicians
- To provide access to careers in medicine for minority and disadvantaged students
- To improve the health status of in eastern North Carolinians

We are privileged to work with a faculty, staff, and student body that embrace this mission and help us to achieve these goals. The proof of that is in the consistent outcomes we have produced since the school started producing graduates. More than 60% of Brody graduates are practicing in North Carolina five years after graduation – nearly double the rate of North Carolina's second highest producing medical school. Data collected annually by the American Association of Medical Colleges consistently show that Brody exceeds the national average for medical schools in producing a more diverse pool of graduates who practice in rural and underserved areas, practice primary care, stay in state to practice, and for whom the debt load is $55,000 less than their peer average nationally – which allows graduates to choose their specialty and practice location from the heart more than from their pocketbook.

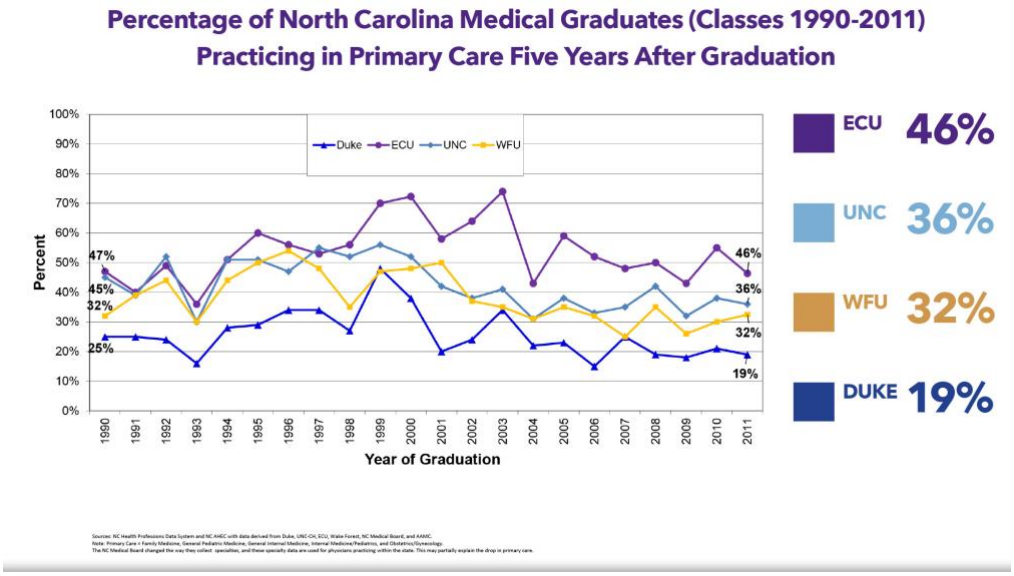
US Medical School Graduates

	Brody	National Average
Practicing in rural areas	12.9%	6.1%
Practicing in underserved areas	35.6%	19.3%
Practicing in North Carolina (same state)	55.5%	34.5%
Practicing in Primary Care	38.9%	22.2%
Practicing Family Medicine	16.0%	8.8%
Who are African American	12.5%	7.1%
Who are Native American	2.0%	0.8%
Average debt of indebted graduate	$112,692	$167,172

2017 AMA Physician Masterfile

The American Academy of Family Physicians has recognized the Brody School of Medicine as one of the highest ranking medical schools for producing Family Physicians in the nation. Brody has been among the top five schools for the past seven years (2011-2017) and the only medical school in the southeast to spend the last decade on the top ten list.

The Sheps Center for Health Services Research at the UNC School of Public Health extensively studies and reports on physician workforce in North Carolina. Annually, they report on the percentage of North Carolina medical graduates practicing in primary care five years after graduation.



According to their January 2018 report on GME in North Carolina, Sheps Center data also demonstrate that Vidant Medical Center, one of the larger residency programs in the state, consistently ranks at or near the top of in terms of the proportion of their residency graduates practicing in rural areas. Compared to other programs in North Carolina:

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

Achieving these results requires continuous focus on the mission and strategic decisions about how we approach our efforts, from pre-admissions/admissions processes to curriculum and para-curricular activities to maintaining low levels of educational debt for our graduates.

Admissions

Fulfilling our mission begins with the admissions process. The Admissions Committee includes students, community physicians and faculty who strive to select an entering class of students that reflect the diversity of the state and show promise of becoming primary care physicians in

North Carolina. Applicants must not only meet standards related to MCAT and GPA scores but must also demonstrate considerable exposure to medical practice and significant contributions to community service. The goal of the Admissions Committee is to select an entering class that is comprised of students of various ages, ethnic backgrounds, cultural heritages and religious beliefs. With an applicant pool of more than 1,000 students per year - all of whom are North Carolina residents – the committee selects 82 students to matriculate in each M1 class. The entering class of 2017 included students who represented 30 distinct counties in NC.

In addition to a focus on recruitment of students from racial/ethnic groups that are underrepresented in medicine, we also intentionally recruit for students from rural and disadvantaged backgrounds. Many studies have provided evidence that applicants from small towns in rural areas are significantly more likely to practice in those same or similar locations upon completion of their training. **Since 2010, Brody has matriculated 55 students from North Carolina's Tier 1 counties and 184 students from Tier 2 counties, accounting for 9% and 29% of the respective students we have trained.**

The Dean of Admissions holds an annual Pre-Medical Advisors Conference with college pre-medical student advisors from throughout North Carolina. This fosters a greater understanding of the mission and outcomes of medical graduates from the Brody School of Medicine. Since 2011, this conference has included the School of Dental Medicine at East Carolina University in order to enhance the enrollment of professional students at both schools.

The Brody School of Medicine continues to sponsor a "Summer Program for Future Doctors" which plays a vitally important role in meeting our primary care and regional health care mission. This nine week program is primarily for college students and graduates from underrepresented populations who wish to become physicians. They receive a living stipend to attend the program, which features 220 hours of instruction in basic sciences (e.g., biochemistry, anatomy, physiology, neuroscience) and also offers instruction in learning skills, test-taking strategies, teamwork and formal preparation for the medical school admissions process, as well as opportunities to demonstrate students' abilities to perform successfully in a medical school curriculum. In addition, they are taught academic study skills and are able to experience clinical patient care in our primary care clinics.

The program is popular statewide, usually attracting between 125-200 applicants each year. Approximately 30 students are enrolled after a robust application process. Strong preference is given to applicants who are members of a minority group underrepresented in medicine, from an environment that has inhibited the individual from obtaining knowledge, skills and/or abilities required to enroll in and graduate from medical school, or from a family with an annual income below a level based on low-income thresholds according to family size, published by the U.S. Bureau of the Census.

Gender, Ethnic Self-Description, NC Economic Tier of Home County for Accepted SPFD Students							
	2012	**2013**	**2014**	**2015**	**2016**	**Total**	**Percent**
Female	4	5	5	5	10	**29**	**47.5%**
Male	9	9	6	3	5	**32**	**52.5%**
African American	4	3	4	1	0	**12**	**19.7%**
Native American	0	1	0	0	0	**1**	**1.6%**
Asian American	2	1	1	2	3	**9**	**14.8%**
Tier 1	1	4	0	3	3	**11**	**18.0%**
Tier 2	5	3	4	3	3	**18**	**29.5%**

Being accepted to participate in SPFD greatly increased a student's chances of matriculating to medical school. The table below shows a comparison of the percentage of NC applicants to Brody compared to the percentage of SPFD students accepted by Brody (and/or other medical schools). Over the 5-year period, 13.8% of the NC applicants were admitted and 48.8% of the SPFD students were admitted. Not all students in a cohort of SPFD students apply to medical school; some have not finished undergraduate work, and some need more preparation. Of those who did apply to medical school over this 5-year period, 76.3% gained admission.

Percent of NC Applicants Accepted by Medical Schools vs Percent SPFD Applicants Accepted						
	2012	**2013**	**2014**	**2015**	**2016**	**Total**
BSOM Total NC Applications	878	884	926	982	1020	**4692**
Total Offers	133	133	122	125	134	**647**
% Accepted	15.10%	15%	13.20%	12.70%	13.10%	**13.8%**
SPFD Non-Matriculating students	25	24	25	24	27	**125**
SPFD Non-Matrics Accepted	13	14	11	8	15	**61**
Percent Accepted	52%	58.30%	44%	33.30%	55.60%	**48.80%**
SPFD Non-Matrics Applying	15	15	20	15	15	**80**
Percent Applying Accepted	86.70%	93.30%	55%	53.30%	100%	**76.3%**

By influencing the success of disadvantaged students from rural and underserved areas of NC who have expressed an interest in primary care, SPFD creates jobs when those physicians return to those same areas to establish practices, to hire local employees and to provide health care. And, SPFD students do return to their roots: **62% of the SPFD alumni who went on to attend medical school are now practicing in NC, with 54% working in Tier 1 or Tier 2 counties.**

For the past sixteen years the Brody School of Medicine has also offered an "Early Assurance" program with the East Carolina University undergraduate Honors College. This innovative plan guarantees enrollment into the Brody School of Medicine to four outstanding freshman students at East Carolina University upon successful completion of their college degrees. This Early Assurance model involves students from NC Agricultural and Technical State University and UNC-Pembroke. Students selected for early assurance must maintain a set grade point average, participate in enrichment activities, and (depending on their undergraduate standardized test scores) are not required to take the Medical College Admissions Test.

As a result of these collective efforts, we continue to realize diversity among our student body that consistently places Brody above the 90th percentile nationally for our percentage of underrepresented in medicine minority students in the school according to the AAMC's annual Mission Management Tool. Our goal, however, is to get to a race/ethnicity balance based on the NC census. 22% black, 9% Latino and around 2% for Native American. The school has recently added a more formal pipeline program office, and we are expanding our efforts further into elementary and middle school, as well as working more robustly with pre-health undergraduate students on the state's college campuses.

Curriculum Emphasis for Primary Care

Medical students at the Brody School of Medicine are introduced to primary care in the first two years through the Doctoring I and Doctoring II courses. These courses are directed by faculty members from the Department of Family Medicine and include teaching faculty from Family Medicine, Internal Medicine, and Pediatrics. Beginning in academic year 2016-2017, students in Doctoring I spend ten days in the office of a community primary care physician over the course of a year to observe the type of care provided in primary care practice and to learn how to take a thorough patient history and perform a physical examination. Students are also mentored in the clinical skills lab and taught by standardized patients and physical diagnosis trainers who work with the primary care faculty in assuring understanding and competence. In the Doctoring II course, students participate in a primary care preceptorship where they work one-on-one with a community preceptor in a primary care physician's office in North Carolina for one week in the spring semester.

The third-year curriculum includes clerkships in Family Medicine, Internal Medicine, Pediatrics, Psychiatry, Surgery and OB/GYN. Students are intimately involved in the team care of the patients. On the Family Medicine clerkship, students spend 50% of their time (4 weeks) living and working in a North Carolina community, residing in AHEC housing and learning community primary care. The Pediatric clerkship includes a two-week community based elective in eastern North Carolina during which students live in AHEC housing and see children with a local pediatrician. They also investigate a population health issue and report back to their cohort upon their return to campus. During the fourth year, all students are required to take a four-week elective in Primary Care. They also have 14 weeks of electives from which to schedule clinical training that enhances their career choice and residency preparation.

Para-Curricular Learning Opportunities

The vast majority of Brody students participate in structured service-learning activities that help guide their career choices. Information from the American Association of Medical Colleges annual graduate survey illustrates the degree of service learning that Brody students have compared to an average of all medical schools in the US (source: 2017 Graduate Survey)

Activity	% of Brody students	% of students nationally
Global health experience	40.8%	27.1%
Educating elementary, high school or college students about careers in health professions or biological sciences	63.4%	49.6%
Providing health education (e.g., HIV/AIDS education, breast cancer awareness, smoking cessation, obesity)	71.8%`	61.6%
Field experience in providing health education in the community (e.g., adult/child protective services, family violence program, rape crisis hotline)	45.1%	36.0%
Field experience in home care	73.2%	33.2%
Experience with a free clinic for the underserved population	91.5%	72.3%

As an illustration, over 90% of Brody students provide care at one of two free clinics, with the help of clinical faculty who volunteer as preceptors. The Crossroads Community Center Clinic is organized by students and run by a board made up of community members, faculty and students. The clinic meets twice a week in the evening and many students participate at each clinic under the guidance of faculty. The Grimesland Clinic meets every Sunday and is organized completely by students. They see approximately 10 to 15 patients weekly, predominantly from a local Latino population. Services offered include medications, medical assessments, treatments and referral to medical homes or specialists at the Brody School of Medicine or the Bernstein Clinic. An interpreter is always present to help the patients, students, and physician preceptors from Brody.

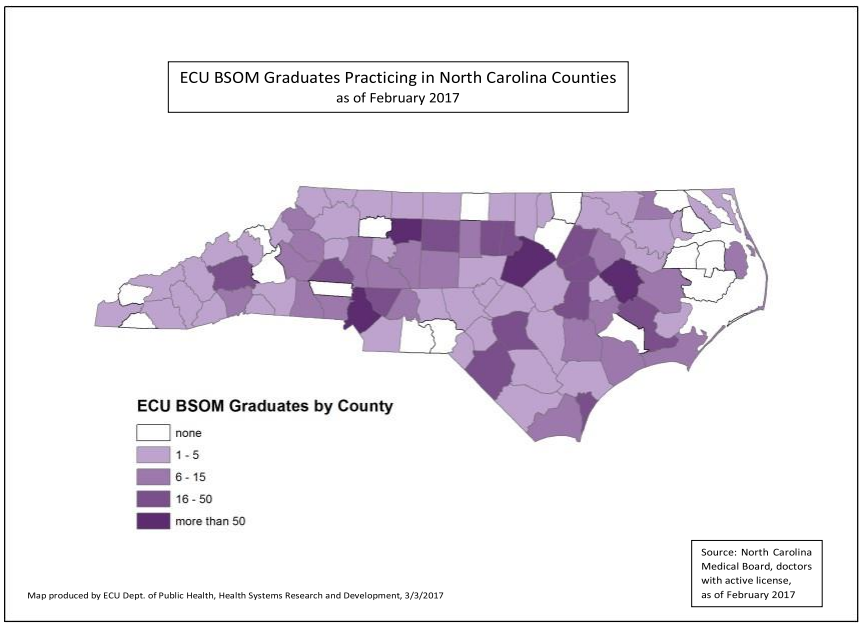
Approximately 5% of Brody School of Medicine students are awarded Schweitzer Fellowships annually. These service-learning awards enable students to build leadership skills and teach service to others. There are several student interest groups that students are encouraged to join during orientation to medical school. These include the Family Medicine Interest Group, the Med/Peds Interest Group, the Internal Medicine Interest Group, and the Pediatric Interest Group. Service learning is also included in the goals of each of these groups.

The way the Brody School of Medicine's medical students serve the communities of North Carolina has earned international recognition. Brody was one of seven schools globally, and one of only two in the US, to receive a 2016 Aspire to Excellence Award, which recognizes outstanding performance in education at medical, dental and veterinary schools. The Association for Medical Education in Europe distributes the award in four categories, and Brody was honored in the social accountability category for emphasizing training in primary care settings in local practices throughout our students' four years.

Early and applied exposure to primary care contributes to the Brody School of Medicine's success in placing our graduates in primary care residencies. The table below provides detailed information regarding primary care residency selection by Brody School of Medicine students from 2014 to 2017:

Primary Care	**2014**		**2015**		**2016**		**2017**	
Total Graduates		81		80		63		78
Total Graduates not entering residency		2		0		1		1
Total Graduates entering residency		79		80		62		77
Primary Care	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**
Family Medicine	20.3	16	15.0	12	22.6	14	16.9	13
Internal Medicine	8.9	7	10.0	8	12.9	8	11.7	9
Pediatrics	16.5	13	13.8	11	19.4	12	23.4	18
IM/Peds	6.3	5	6.3	5	9.7	6	3.9	3
TOTAL	**51.9**	**41**	**45.0**	**36**	**64.5**	**40**	**55.8**	**43**
OB/Gyn	7.6	6	6.3	5	8.1	5	5.2	4
Total w/ OB/GYN	**59.5**	**47**	**51.3**	**41**	**72.6**	**45**	**61.0**	**47**

Consistent with earlier tables which displayed the school's outcomes of retaining graduates in state to practice five years after their training, the class of 2016 and 2017 graduates responded to the AAMC Graduate Survey with intention to practice in North Carolina at rates of 81.1% and 73.7% respectively. These graduates also reported plans to practice in rural communities, small and medium sized towns (under 10,000 people; other than suburb) at a rate of 14.3% compared to 3.6% nationally. Following residency training, Brody graduates make a significant contribution to the region and state, as shown from our alumni tracking below:



New Initiatives

Since our last report in 2016, Brody has added the following new programs and initiatives that we believe are additive to the primary care mission:

- With funding from the American Medical Association in its Accelerating Change in Medical Education program, we have implemented a longitudinal curriculum in health systems science (patient safety, quality improvement, team-based care and population health) for all medical students. The components of this curriculum begin on day one of medical school and continue through the spring of the M4 year, and better prepare our graduates to work in, and lead within, a rapidly changing healthcare environment.
- We created four para-curricular Distinction Tracks in (a) Health System Transformation and Leadership, (b) Research, (c) Service Learning, and (d) Medical Education. These tracks engage 10 students per program – who are competitively selected after their first semester of medical school – in doing more intensive, focused training in each of these areas
- We redesigned the entire medical curriculum to provide for earlier and more varied clinical training.
- We initiated a planning process to expand GME slots in several rural primary care integrated rural training tracks, which will increase the opportunity for graduates of Brody

and other NC medical schools to remain in state for their residency training, thus substantially increasing the likelihood of retention in North Carolina for practice. By focusing on rural GME training, we expect our percentage of graduates practicing in rural areas to increase.

- We initiated a planning process to increase our overall Brody class size from 82 students per year to 120 students per year. By using the same "formula" for success described above, we believe that growing the class size at Brody will result in a high return on investment for the state of North Carolina and its physician workforce.

Report to the

Primary Care Medical Education Plan
2018 Update

The University of North Carolina at Chapel Hill

School of Medicine

William L. Roper, M.D., M.P.H.
Dean of the School of Medicine
Vice Chancellor for Medical Affairs
CEO UNC Health Care System

Wesley Burks, M.D.
Executive Dean

Julie Story Byerley, M.D., M.P.H.
Vice Dean for Medical Education

March 2018

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

PREFACE

The vision of the UNC School of Medicine is to be the nation's leading public school of medicine. To that end, we have a broad mission that includes educating a large number of primary care physicians to serve our state. The UNC School of Medicine (UNC SOM) continues its fundamental and substantial support for primary care, and is proud to celebrate that in 2017 US News and World Report yet again named us the #2 primary care school in the nation. This is evidence of our efforts and success as well as our strong reputation in this area.

Our School of Medicine is strong in primary care because of our exceptional faculty and students, large teaching presence of primary care faculty, numerous clinical experiences in primary care settings across the state, extensive service and research opportunities, collaboration with the North Carolina AHEC distributed educational system, and ongoing tracking of the longer term outcomes of medical education through the Health Profession Workforce unit at the Cecil G. Sheps Center for Health Services Research. These programs have been outlined in prior reports. This report outlines new programs that the UNC SOM has added to its primary care medical education plans since 2016 and provides updated data on some of our existing work.

The American Association of Medical Colleges (AAMC) each year publishes a Missions Management Tool which helps to compare data on allopathic medical schools. In 2017, UNC SOM was ranked above the 85th percentile in a variety of important markers that support our mission to serve the underserved – the number and percent of graduates who are African American, the percent of graduates who are Native American, the percentage of women faculty, the percentage who plan to participate in national service, and student satisfaction with their medical education. UNC was ranked in the 66 percentile for graduates who practice in rural areas which is especially impressive given our broad mission and that concurrently we are ranked in the 85th percentile of total research dollars (bringing in $296M to the State).

PREMEDICAL PREPARATION AND ADMISSIONS

The UNC School of Medicine has the largest medical school class size in the state. We have well over 5000 applicants annually and accept only about 250 to fill our class with 180 students per year. Thanks to the bond passage in March, 2016, we are in the process of designing a new medical education building to accommodate an even larger class size. Should funding be made available, we hope to increase our class size to 230, which has been approved by the Board of Governors. In fiscal '18 the state legislature funded a small expansion and this fall we will be increasing our class size to 190.

In selecting our class, we admit those who are both academically qualified and most likely to make an impact of service in the broad spectrum of need through their doctoring. The chart below illustrates our success at matriculation of those we accept, and our success in building a class that is diverse. We know from the literature that medical students from

underrepresented backgrounds are more likely to serve areas of high need thus we strive to recruit a diverse class to be of better service to the state and have our graduates work to reduce health disparities.

App Year	Total Apps Rcvd	Total Apps Rcvd in-state	Offers of Acceptance	Total offers of acceptance for In State	Matriculated In-State	Matriculated Out of State	Enrolled Under Represented Minority	Enrolled MED Graduates
2014	**5680**	**988**	**255**	**192**	**152**	**28**	**38 (21%)**	**21**
2015	**6198**	**1019**	**234**	**172**	**151**	**30**	**32 (18%)**	**17**
2016	**7265**	**1098**	**233**	**177**	**145**	**35**	**39 (22%)**	**22**
2017	**6443**	**1022**	**237**	**179**	**147**	**33**	**41 (23%)**	**17**

The Office of Medical Education oversees diversity pipeline efforts through its Office of Special Programs led by Dr. Cedric Bright, the Associate Dean for Inclusive Excellence. The Medical Education Development (MED) is a nationally known, more 40-year-old SOM program pipeline program that helps facilitate diversity within the student body by recruiting and supporting minority and/or disadvantaged students. Through its academic program, it provides students a chance to enhance their academic credentials while preparing for medical or dental school admission and increases personal and academic skills for coping with professional training. The focus of the MED program has been expanded to recruit more Native American and Latino students, first generation college students, and disadvantaged rural students of all ethnic backgrounds. In 2017 the MED program expanded its enrollment by 10 students specifically recruited from rural backgrounds. Our vision is that we will develop rural recruiting as a special pipeline just as we have succeeded in recruiting African American physicians. UNC SOM is now at the 99%ile for fraction of our class who is African American. This tremendous success has come from concentrated effort and investment over four decades. We are now beginning to invest in rural recruiting similarly and aspire for comparable outcomes.

It is recognized that to address the need for a rural physician workforce we need to accept and educate medical students who have been raised in rural areas. The single most important factor in getting a physician to serve a rural area is his or her experience previously living in a rural area. To that end, we have developed a rural admissions subcommittee to review all applicants with that upbringing. We have also launched a variety of pipeline programs targeting talented young people in rural areas and cultivating their interest in medicine.

OFFICE OF RURAL INITIATIVES

In 2017 we opened the Office of Rural Initiatives to coalesce and expand our services to inspire students toward rural service. The Office of Rural Initiatives is funded through both public and private dollars. It is led by our Associate Dean for Rural Initiatives, Dr. Robert Bashford and includes staff members that participate actively in outreach. The Office of Rural Initiatives supports general rural recruitment in general and the following specific programs:

KENAN PRIMARY CARE MEDICAL SCHOLARS

In 2012, Sarah Graham Kenan Rural & Underserved Medical Scholars Program was launched. This program allows a selected small group of medical students (approximately 7 each year) to identify their interest in rural health, relate to a mentor rural preceptor, engage in a community project in a rural area in the summer after their first year, participate in the Asheville longitudinal program for their clinical education, and experience focused small group sessions to advance their skills and knowledge about rural primary care. Scholarship support for these students is provided thanks to the Kenan Charitable Trust. The purpose of this program is to ultimately increase the number of UNC SOM students seeking rural health careers in North Carolina and to provide financial support and enrichment experiences to sustain their decisions.

In 2018 this program expanded to allow students to train in rural areas near the Wilmington and Chapel Hill campuses as well.

The Kenan Primary Care Medical Scholars program also includes a summer program Charlotte, focusing on the Urban Underserved.

The Kenan Primary Care Medical Scholars programs now has its first class in residency, all in high need fields. Outcomes will be farther assessed after participants complete residency but we are optimistic about this program being our most effective in cultivating a rural work force.

NC RURAL PROMISE SCHOLARSHIP

In 2015 the UNC School of Medicine was given the generous sum of $1M annually from the state legislature to expand the successful Kenan Rural Primary Care Medical Scholars program. With those state funds we have expanded the Kenan Scholar program as it is and also are offering one-time loan repayment in exchange for obligatory service to a rural county of NC in the high need fields of primary care (which we define for this as Family Medicine, Internal Medicine, and Pediatrics), Obstetrics and Gynecology, General Surgery, and Psychiatry. In 2016, our first year of the program, we had 17 request the funds and agree to serve rural NC. Each year since, approximately the same number have received the scholarship. The most senior students in this program are now in

residency training. Upon the completion of residency training, the honorees have made a commitment to serve in one of the state's 80 rural counties.

In addition, we are using those state funds to develop our rural pipeline program in additional ways. Our staff lead for the Office of Rural Initiatives travels across the state of NC to colleges, community colleges, and high schools to focus on inspiring bright students from rural areas to pursue careers as physicians. This person is especially reaching out to college students in the UNC System from rural areas to entice and help prepare them for medical school.

RURAL INTER-PROFESSIONAL HEALTH INITIATIVE (RIPHI)

The ***UNC Rural Interprofessional Health Initiative (RIPHI)*** is a three-year pilot program supported by a $1.5 million award from the William R. Kenan, Jr. Charitable Trust. This award will provide faculty and programmatic support that will enable UNC health professions students to serve and learn in underserved rural clinic settings in North Carolina. Goals of the project are to inspire a rural health care workforce and to help transform clinical care in underserved areas and to establish interprofessional clinical experiences in rural areas of North Carolina.

The RIPHI program is a joint effort of the health professions schools at UNC, each of which has a similar mission – improve and promote the health and wellbeing of North Carolinians, improve public health and eliminate health inequities, advance and advocate for health care through education, practice, research, innovation and collaboration.

Meg Zomorodi, PhD, RN, CNL, Clinical Associate Professor in the School of Nursing serves as the Director of Interprofessional Education. The RIPHI award also provides funding support for UNC RIPHI Faculty Champions at each of the UNC Health Affairs Schools – UNC Eshelman School of Pharmacy, UNC Gillings School of Global Public Health, UNC Schools of Dentistry, Nursing, Social Work, and UNC School of Medicine and its Department of Allied Health Sciences, and support for the UNC RIPHI Rural Site Investment Fund to foster clinical community site development and implementation. The Faculty Champions will work in partnership to guide the RIPHI program over three-year pilot and provide perspective and support from each health profession.

PRIMARY CARE AND POPULATION HEALTH SCHOLARS

The **Primary Care and Population Health (PCPH) Scholars** is a longitudinal program for medical students who are interested in **practicing cost-effective, high-quality primary care as part of a larger vision of improving the health of populations**. In addition to this unique blending of primary care and public health concepts, the program helps students build skills in research, writing, and leadership.

COMMUNITY ENGAGEMENT PROJECTS

The Office of Rural Initiatives also secures and funds summer community engagement projects for first year medical students. We know from the evidence in the literature that students learning in rural communities are more likely to serve in rural communities long term.

FULLY INTEGRATED READINESS FOR SERVICE TRAINING (FIRST)

Also in 2016 we launch the FIRST program, funded by The Duke Endowment. This innovative experience will allow a small cohort of mature students with advanced clinical experience to graduate from medical school in 3 instead of the typical 4 years and funnel directly into our UNC Family Medicine residency program. These students will then train in more rural areas and graduate from residency with intent to serve as primary care clinicians in high need areas of our state. They will have direct support from the UNC Department of Family Medicine for 3 years following their training. This efficient program is cost effective in directly producing family physicians NC needs. The first two graduates from that program will enter UNC Family Medicine residency this year.

THE MEDICAL SCHOOL CURRICULUM AT UNC

In August of 2014 we launched a modern new curriculum, Translational Education at Carolina. This innovative curriculum is built on the following principles:

Our School of Medicine Curriculum will…

- *be student-centered and patient based, while being population, public health, and globally inspired*
- *facilitate translation and integration of basic, clinical, and population science to enhance human health and well-being*
- *provide a strong foundation for entry into graduate medical education within the broad opportunities of medicine, while being flexible and individualized*
- *be responsive to the changing healthcare environment*
- *focus on promoting, supporting and maintaining health, not just treating disease*
- *incorporate strengths of the university including opportunities for inter-professional and cross-disciplinary education*
- *provide longitudinal engagement with faculty and robust mentorship*
- *incorporate multiple modes of student learning*
- *instill intellectual curiosity developing an aptitude for critical thinking and lifelong learning*
- *promote the development of leadership skills, professionalism, ethics, humanism, and service to others*

This curriculum better prepares students to eventually practice primary care. It emphasizes population health concepts, the medical home model, interprofessional education, and professional development. Students enter the clinical environment earlier in their medical school experience and will enter residency better prepared. Students have the opportunity to individualize their curriculum through tracks and more elective experiences.

This curriculum is gaining a national reputation for innovative ways to train aspiring physicians in primary care. UNC was recently selected to participate in the AMA Accelerating Change in Medical Education Consortium to share our ideas for preparing physicians for the future.

CURRICULAR EXPERIENCE: PATIENT CENTERED CARE

All medical students complete an 18 month Patient Centered Care course focused on the basic skills needed in primary care.

CURRICULAR EXPERIENCE: COMMUNITY BASED LONGITUDINAL CARE CLERKSHIP

In the TEC curriculum at UNC SOM we have improved our primary care clerkship teaching by developing a longitudinal model for all medical students. Longitudinal models of teaching have comparable academic outcomes with sustained optimism and improved markers of wellness. We also hypothesize Every UNC SOM student spends at least 16 weeks in a primary care practice during their clinical clerkship year.

MD/MPH COMBINED DEGREE PROGRAM

The MD/MPH program at UNC trains leaders for the evolving health care environment of the 21st century. It provides students the opportunity to integrate the individual patient perspective with that of the population sciences, thus strengthening each. We continue to have one of the largest combined degree programs in the country. Students of all specialty interests seek the MPH; by its nature, however, it attracts more interest from those focusing on primary care.

THE GROWTH OF REGIONAL CAMPUSES FOR THE UNC SCHOOL OF MEDICINE

One way to develop a workforce for the state is to educate medical students throughout the state. For that purpose we have expanded our regional campus system. Regional campuses are an efficient and effective method for providing clinical education in settings where we hope to inspire physicians to practice. Using the resources of the large and accomplished health affairs campus in Chapel Hill, we bring all 180 of our medical students to the University for the Foundation Phase of their curriculum. Here they learn from expert scientists and clinicians and benefit from interprofessional learning experiences with students at UNC's top schools of Allied Health, Dentistry, Nursing, Pharmacy, and Public Health. We teach using our impressive Simulation Center and the resources across the UNC CH campus as we prepare medical

students to learn in the clinical environment. Then, we distribute those students across the state using AHEC resources at our regional campuses and elsewhere, intending to inspire state service in a variety of communities outside of the Triangle.

Since 2009 we have had formal SOM campuses in Asheville and, in 2010, Charlotte. In 2016 we added a regional campus in Wilmington. Our regional campuses are accomplishing the goals we set for them. Asheville is our most established campus, and the outcomes there are excellent. Ninety-six students have finished their core clerkship year on the Asheville campus, and 12 of those are finished residency and in practice. Eight of those are practicing in NC, and 5 of those are practicing in Western North Carolina in primary care fields. Of the 68 in residency or practice, 11 did or are doing residency at MAHEC. Fifty-seven of 68 in residency or practice are in primary care fields or those of high need of psych or general surgery. We are anticipating similar results for our other campuses.

Regional campuses are a unique feature of the UNC SOM that accrue substantial benefit to UNC students and faculty. Regional campuses create an environment for incorporating innovation into the curriculum, are a much more cost effective model, leverage the faculty and resident teaching capacity already in place at the regional campuses and create the potential for drawing a much larger pool of doctors into primary care.

ASHEVILLE

Beginning in the 2009-10 academic year, UNC SOM, Mission Hospital and MAHEC offered an alternative longitudinal curriculum in Asheville for medical students. The program has continued to grow and has demonstrated excellent outcomes in support of primary care, especially in the western part of the state. The class size there has grown in response to high student demand and legislative investment, and is now at 30 students per year. We are in the process of building a state funded building there to expand our student opportunities. In addition, the Eschelman School of Pharmacy has a thriving branch campus there, and the Gillings School of Global Public health is building one on the MAHEC campus as well.

CHARLOTTE

At the Charlotte campus we began a similar longitudinal curriculum in academic year 2013-14. This pilot began with 6 students and has grown to 24 students per year. In addition to longitudinal exposure to patients and preceptors, this curriculum also emphasizes simulation teaching and ultrasound technique. The simulation curriculum prepares students to better function in teams while the ultrasound curriculum will allow our graduates to potentially provide more advanced care as primary care providers.

WILMINGTON

In 2016, with the launch of the new clinical phase of our TEC curriculum, we opened the branch

campus in Wilmington. This campus is beginning with only 3 students but is anticipated to grow to 12 over time. The current first year class at UNC SOM had 10 members request the Wilmington campus as their first choice. In addition to their core clinical curriculum, the students on this campus students will have the opportunity to get a certificate from the UNC Wilmington Cameron School of Business in Physician Leadership.

OTHER IMPORTANT CLINICAL SITES

We are continuing to build our clinical education sites in Greensboro and Raleigh as well. At each site we already have significant clinical experiences for our students but would like to expand the experiences to include all clinical disciplines and therefore have more opportunities for longitudinal placements of students in those communities.

PIEDMONT HEALTH SERVICES

Thirty students per year learn in their Community Based Longitudinal Care course at a federally qualified health center through Piedmont Health Services. Serving in this underserved setting inspires students to envision their eventual careers in high need settings.

LOW STUDENT DEBT

Thanks to generous State and philanthropic support our graduates have approximately $70,000 less debt at graduation than their national peers. Lower debt burden also correlates with service in primary care in underserved areas.

EXTRACURRICULAR OPPORTUNITIES

UNC School of Medicine students participate in a wide variety of activities that provide service to the community and educate students in ways that lead to support of primary care careers. We honor many of those students with membership into the Eugene Mayer Honor Society for Community Service.

Our students also continue to expand the work of SHAC, the Student Health Action Coalition, the oldest continuously running student free clinic. More student-led and faculty supported initiatives have grown out of this model including Beyond Clinic Walls (a mobile SHAC unit), Amigas en Salud, a program for health and wellness in the Latina community, and the Refuge Health Initiative. Supported by Albert Schweitzer scholarships, we also have several groups of students working with community organizations and faith based programs to support community health. Participating in these models of interprofessional education and teamwork prepares students to function in the medical homes of tomorrow and, through student service, hopefully inspires a commitment to meeting the primary care needs of patients and communities.

ACCELERATING CHANGE IN MEDICAL EDUCATION

At UNC School of Medicine we are one of 32 medical schools granted a chance to participate in the American Medical Association Accelerating Change in Medical Education consortium. Through that national work we are considering ways to best prepare the physician work force needed to enhance patient and population health in our future. There is certainly an interest in primary care in that group.

OUTCOMES

UNC is the largest medical school in the state, now with a class size of 180 students. In a typical year, approximately half of graduates from UNC SOM initially enter a primary care residency. The tables below illustrate our sustained successful outcomes in providing a work force for our state and beyond. In addition to the typical ambulatory care disciplines, we are strongly encouraging our students to enter the much needed fields of psychiatry and general surgery.

Fraction of the class entering each discipline:

	Family Medicine	Internal Medicine	Pediatrics	OB/Gyn	Total in Primary Care	Psych	General Surgery
2008	21 (13%)	31 (19%)	18 (11%)	15 (9%)	52%	5 (3%)	11 (7%)
2009	14 (9%)	20 (13%)	15 (10%)	15 (10%)	42%	7 (4%)	7 (4%)
2010	15 (11%)	13 (9%)	23 (17%)	13 (9%)	46%	7 (5%)	7 (5%)
2011	17 (10%)	23 (15%)	13 (9%)	14 (9%)	43%	8 (5%)	8 (5%)
2012	19 (12%)	35 (21%)	16 (10%)	14 (8%)	51%	11 (7%)	5 (3%)
2013	19 (11%)	24 (16%)	13 (8%)	17 (11%)	46%	8 (5%)	5 (3%)
2014	17 (10%)	31 (19%)	17 (10%)	9 (6%)	45%	6 (4%)	13 (8%)
2015	20 (11%)	38 (21%)	17 (9%)	20 (11%)	52%	4 (2%)	6 (3%)
2016	19 (11%)	27 (16%)	17 (12%)	9 (5%)	44%	14 (8%)	14 (8%)
2017	20 (11%)	31 (17%)	15 (8%)	15 (8%)	44%	11 (6%)	7 (4%)

Residency placements in NC

	2012	2013	2014	2015	2016	2017
UNC	36	31	33	27	29	35
Carolinas Medical Center	5	5	4	8	9	6
Duke	9	7	6	5	4	5
ECU	2	0	0	1	2	2
MAHEC	2	1	2	7	2	4
Wake Forest	4	1	2	7	5	2

Other AHEC placement in NC

	2012	2013	2014	2015	2016	2017
CMC Northeast Cabarrus	1	1	1	0	0	1
Duke Eye Center	0	0	1	0	0	2
Moses Cone	0	6	1	4	1	1
New Hanover Regional	0	3	1	1	1	2
Total in NC	59	51	51	55	53	60

UNC RESIDENCIES THAT SPECIFICALLY SUPPORT PRIMARY CARE

UNC has large residency programs in all of the primary care and needed disciplines. Two residency programs in primary care at UNC have developed specific tracks into underserved primary care, the Family Medicine Underserved Track and the Pediatrics Primary Care Residency. Though not part of the School of Medicine curriculum for the MD degree, the presence of these programs is inspirational for our students and certainly in support of the primary care mission.

The Pediatrics Primary Care Residency Program at the University of North Carolina is a program developed in collaboration with Cone Health in Greensboro for 4 residents per year to experience a more longitudinal model of training focused on providing a medical home for children. It was initially funded by HRSA and now is funded through partnership between UNC Health Care and Cone Health. One hundred percent of the residents in that program, since its opening in 2011, intend or have entered careers in primary care.

Program	**Number of Residents in Training at UNC Hospitals, 2018**
Family Medicine	**27**
Family Medicine Underserved Track	**8**
Pediatrics	**53**

Pediatrics Primary Care	**12**
Internal Medicine	**82**
Combined Medicine Pediatrics	**23**
Psychiatry	**53**
General Surgery	**46**

SUMMARY

The University of North Carolina School of Medicine is a leading public medical school, recognized by US News and World Report as #1 in Primary). We remain committed to innovative recruitment, curricular and educational programs to support our students' opportunities to become physician leaders in addressing the primary care needs of our state and the health of our population.

Report to the Board of Governors
of
The University of North Carolina

Primary Care Medical Education Plan 2016 Update

from
Wake Forest School of Medicine

March 2018

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

Since 1994, Wake Forest School of Medicine has submitted an institutional plan for increasing the number of generalist graduates including students entering the primary care disciplines of family medicine, internal medicine, obstetrics/gynecology and pediatrics every two years. Initiatives described in the plan included work within the Department of Family Medicine and the administration of the Northwest Area Health Education Center. This update will focus on current and planned initiatives, which are directed toward ensuring that our educational programs meet the needs of our students and society.

Recent support for curriculum innovation has come from Northwest AHEC, the Duke Endowment, and from the Fullerton Foundation in South Carolina.

One metric used to evaluate the effectiveness of our programs to train students for a career in primary care is the number of Wake Forest School of Medicine graduates entering primary care related residences. In 2017, 52% of graduates from Wake Forest School of Medicine entered residencies in primary care associated disciplines. Over the last 5 years, this percentage ranged from 34% to 52%.

Graduating Class of …

Residency Match	2013	2014	2015	2016	2017	5-year Cumulative Total
Family Medicine	11 (9%)	13 (11%)	9 (8%)	9 (8%)	16 (14%)	58 (10%)
Internal Medicine	27 (21%)	13 (11%)	14 (12%)	23 (21%)	22 (19%)	99 (17%)
Obstetrics & Gynecology	2 (2%)	4 (3%)	3 (3%)	4 (4%)	11 (10%)	24 (4%)
Pediatrics	15 (12%)	10 (9%)	17 (15%)	11 (10%)	11 (10%)	64 (11%)
Total Graduates	125 (44%)	115 (34%)	114 (38%)	109 (43%)	115 (52)	578 (42)

Another metric used to evaluate the success of our primary care initiatives is through the results from the 2017 Association of American Medical Colleges (AAMC) Graduation Questionnaire. The Family Medicine Clerkship at Wake Forest School of Medicine ranked higher than the national average in regards to student report of the quality in the “good and excellent” categories of the educational experience (97.6% Wake Forest; 85.7% national average). Additionally, based upon the 2017 AAMC Graduate Questionnaire, our graduates reported a higher percentage of experience with a free clinic for the underserved population (95.2% Wake Forest; 72.3% national average).

Programmatic efforts since the last report have been focused in the following areas:

1. **Enrollment**

Despite the loss of Board of Governor scholarships, Wake Forest School of Medicine has, and continues the commitment to the disproportionate selection of North Carolina residents for admission to Medical School. We had 9,281 applications for the 2017 entering class (graduating Class of 2021), with 891 (9.6%) applicants from North Carolina. 46 or 33.8% of North Carolina residents were selected and matriculated into the 136 member Class of 2021. Over the past five entering years 2013-2017, Wake Forest School of Medicine has enrolled 208 (33%) total North Carolina residents. See the recent trend detailed data below.

Year of	Total #	# NC	NC	Total

Matriculation	Applicants	Applicants	Matriculants	Matriculants
2013	7,432	753 (10%)	54 (45%)	120
2014	8,091	785 (10%)	32 26%)	120
2015	8,602	832 (10%)	34 (28%)	120
2016	9,115	875 (9.6%)	42 (32.6%)	129
2017	9,281	891 (9.6%)	46 (33.8%)	136

2. **Curriculum**

Currently, our curriculum provides Wake Forest MD students early clinical exposure and improved continuity and development of longitudinal relationships with faculty mentors and medical teams. Key curricular initiatives that are targeted at primary care include:

1. **Community Practice Experience**

   The School of Medicine's curriculum committee is constantly reviewing courses and ensuring our students are gaining a variety of experiences. Currently our students complete the Clinical Practice Experience (CPE), in both the first and second years of the curriculum. These experiences are each one-week in duration and are conducted at outpatient practices across the state of North Carolina. However, the curriculum committee has called for increasing the community practice time in the required "Clinical Immersion" (clerkship) phase of the curriculum, which will begin in spring of 2019. This will allow for an increase in exposure to community practices.

2. **Ambulatory Clerkships**

   During the third year, students rotate through two purely ambulatory experiences: a four-week rotation in Family Medicine, and a four-week rotation in Emergency Medicine. Additionally, students get ambulatory exposure through all of the other clerkships, including two weeks of ambulatory in the Internal Medicine rotation, three weeks of ambulatory in the Pediatrics rotation, one week in OBGYN outpatient clinics in Women's Health/Obstetrics/Gynecology rotation, two weeks of outpatient clinic in Neurology, and exposure to ambulatory components in the Psychiatry and Surgery Clerkships. Additional primary care experiences are available via electives in year 4 of the curriculum. Multiple community-based practice sites are utilized for student education in these electives.

3. **Clinical Skills**

   The Clinical Skills Foundations (CS1) course is the first year component of students' longitudinal clinical skills curriculum. The overall objective of CS1 is to teach students how to perform fundamental clinical skills including doctor-patient relationship building and communication (DPR) skills, introductory history taking skills, introductory physical examination (PE) skills, and clinical documentation skills, with an emphasis on patient-center care, professionalism, and professional identity development. The CS1 course consists of 16, four-hour sessions distributed over the course of the Year 1. Sessions consist of small-group learning activities during which students will learn about and practice multiple clinical skill sets under the guidance of a 2-faculty coach team.

The Applied Clinical Skills (CS2) course is the second year component of students' longitudinal clinical skills curriculum. The overall objective of CS2 is to build upon the foundational clinical skills learned in Year 1 of the curriculum and to prepare students for their upcoming clinical rotations in Year 3. As in Year 1, students will continue to practice and build their fundamental clinical skills including doctor-patient relationship building and communication (DPR) skills, history taking skills, physical examination (PE) skills, and clinical documentation skills, with an ongoing emphasis on patient-center care, professionalism, and professional identity development. In contrast to Year 1, however, where training is primarily focused on basic data gathering, Year 2 clinical skills training challenges students to learn and practice focused data gathering, data interpretation based on your understanding of pathophysiologic mechanisms of disease, iterative differential diagnosis formulation, and initial diagnostic and management decision-making.

4. **Population Health – Healthcare Systems and Policy**

Healthcare in America is transforming with a renewed focus on patient safety, quality, and value-based care. To function in this changing landscape, tomorrow's physicians must understand the historical forces driving healthcare reform and the principles shaping new policies. The Healthcare Systems & Policy course was first offered in academic year 2015-2016 and it gives students the knowledge needed to thrive in our evolving healthcare system (including primary care) and meaningfully advocate for future improvements. The course content is delivered by a multidisciplinary team of educators with expertise in health economics, public health and health policy, patient safety, and practice management.

3. **Research Programs**

The primary opportunity for medical students to participate in research is the Medical Student Research Program (MSRP). This 9-week summer opportunity provides students with the opportunity to work with a faculty mentor on a defined research project in basic, clinical, or community-based research. Many of the research efforts are related to primary care in that they evaluate the treatment of common illness, health outcomes, general health status and/or health delivery services. The MSRP is jointly funded by an NIH T35 Short-term Research Training Grant, institutional, and foundation resources. The MSRP, which includes the Research Ethics Seminar Series and culminates with Medical Student Research Day, is in its 38th year at Wake Forest. Data from the 2017 AAMC GQ, showed that 84.5% of students participated in a research project with a faculty member and 15.5% participated in a community-based research project.

A second opportunity for medical student research is available through The Maya Angelou Center for Health Equity, which sponsors 1 to 4 additional summer research experiences for students who are interested in investigating health disparities and health equity. The focus of this program is to expose medical students to and advance the conduct of population-impact health research surrounding broad- based, sustainable outcomes that influence health policy in underserved populations. The Maya Angelou Center for Health Equity makes funds available for 10-12 week experiences for Wake Forest School of Medicine medical students who submit proposals, in the MSRP format, that focus on improving minority health or addressing, reducing, or eliminating health disparities especially for the 6 major health disparities areas of cancer, cardiovascular disease, diabetes, HIV/AIDS, immunizations, and infant mortality.

Student research is showcased in the student-run "Wake Forest Journal of Science and Medicine" (WFJSM). The WFJSM is a student-led, open-access, peer-reviewed platform for the publication of clinical and translational science, case reports, perspectives, and reviews. The journal was initiated in 2014 by Wake Forest medical students and is primarily run by students with guidance from the editorial board composed of the Dean of the School of Medicine and 5 additional faculty members.

4. **Premedical Preparation**

The Biomedical Science Premedical Post-baccalaureate Master's Degree Program, is a revision of the previous non-degree granting post-baccalaureate premedical development program that began at the medical school in 1987. The purpose of the program is to prepare students from disadvantaged and/or underrepresented populations for medical school and recruit them to Wake Forest. The program is a preparatory path for Black/African American, Latino/Hispanic and low socioeconomic students to medical school. Since its inception, over 300 students have graduated from the program with more than 90% matriculating at schools of medicine. In 2014, the revised Post-baccalaureate program enrolled its first class and continues to serve as a preparation and recruitment tool for students underrepresented in medicine as well as socioeconomically disadvantaged students. Students in the Biomedical Science Premedical Post baccalaureate Master's Degree Program take a minimum of 30-36 semester hour credits in the biomedical sciences. Courses are in disciplines including: biochemistry, molecular cell biology, neuroscience, human physiology, human anatomy, microbiology, pharmacology, critical thinking skills, and study skills to enhance the student's preparation for their professional school application. Scientific professionalism and the responsible conduct of research courses are available as electives along with additional electives within the Graduate School. Students completing the entirety of the two-year program can graduate with a Master of Science in Biomedical Science. Additionally, we provide the following student enrichment experiences for high school and/or undergraduate students:

- **Camp Med (Northwest AHEC)** is a week-long summer program initiated in 2000 to provide a medical school experience to high school students. Twenty counties in NC offer Camp Med and the average enrollment in a county's program during a given week is 12-32 students.
- **Sisters in Science** – An annual event with a mission to engage, educate and provide exploration opportunities in health care to female students from Forsyth County, North Carolina. Initiated in 2005, the average enrollment in this event is 100 students. This is partially supported by Northwest AHEC.
- **Project SEARCH Academy (Northwest AHEC)** – An annual program for minority high school students in Forsyth County, North Carolina, to explore careers in medicine and other health care careers. The program partners with local community colleges and health care systems. Initiated in 2003, the average enrollment in this program is 24 students.
- **SNMA Pre-Medical Conference** - an annual conference to advise potential applicants and pre- medical advisors on preparing for medical school application, interview skills and the MCAT exam (e.g., preparation, resources

and updates). Initiated in 2007, the average enrollment in this program is 150 students. This is substantially supported by Northwest AHEC. The last conference was held in February 2018 and was the first year the conference incorporated other healthcare avenues to include the Physician Assistant Program, Nurse Anesthesia Program and the Biomedical Sciences Graduate Degree Programs.

- **National Youth Leadership Program** - a two-week program for 300 high school students selected from a nationwide pool who are interested in pursuing an MD degree. WFSM sponsors three scholarships annually, for Forsyth County high school students from URM or low socioeconomic status households to attend. Initiated in 2011, the average enrollment in this program is 100 students.
- **Undergraduate Student Mentoring** –The Associate Dean for Student Inclusion and Diversity mentors undergraduate students who are preparing for medical school. These students are from a variety of institutions, including Winston-Salem State University, where the Associate Dean for SID has maintained a mentoring small group over the past 8 years (i.e., "Winston-Salem State University Women").
- **Wake Forest School of Medicine chapter of SNMA** - provides mentoring to chapters of the Minority Association of Pre-Medical Students (MAPS) across the state of North Carolina to discuss applications to medical school.

5. **Extracurricular Activities/Community Service Opportunities for Students**

A. **DEAC Clinic**: The major community service opportunity for medical students is the Delivering Equal Access to Care (DEAC) Clinic. The DEAC Clinic is a 501(c) (3) student-run and physician-staffed free clinic. Both medical students and physician assistant students are involved. The mission of the DEAC Clinic is to "address the long-term primary care health needs of our local, underserved communities and create a service-oriented learning experience for students to hone their clinical skills". All patients are financially screened and must have a household income of <200% of the federal poverty level and not be eligible for other state or federally sponsored health insurance.
The DEAC Clinic is held every Wednesday evening from 6 -9 pm at the Community Care Center, a free clinic founded by retired physicians, located 4 miles from campus in an underserved area of the community. Services include routine primary care and selected specialty clinics, including cardiology, pulmonology, dermatology, and sports medicine; laboratory; free medications on site; social services; mental health screening, screening for sexually transmitted infections, and community wellness and prevention education. During clinics, students work in varied roles including check-in, triage, phlebotomy and laboratory, pharmacy, medical interpreting, medical team, and health and wellness counseling. Student feedback indicates that they highly value the opportunity for an early exposure to actual

clinical practice.

B. **Annual Share the Health Fair**: Share the Health Fair is a one-day community health fair held in January at the Downtown Health Plaza, an outpatient facility of Wake Forest Baptist Medical Center. Screenings are provided at no charge include screenings for hypertension, diabetes, sickle cell, HIV, syphilis, glaucoma and assessment of bone density, lung function, anthropometric measures/BMI, mental health issues, balance and strength, nutrition, and risk factors for sleep apnea and stress management. Counseling is available for smoking cessation, nutrition, mental health issues. Flu shots are also given. The fair has involved as many as 185 medical and physician assistant student volunteers, 26 physicians and residents, and 20 other health care professional volunteers. It has provided ~1400 health screenings / year. Financial support for the Share the Health fair comes from grants received by the Northwest Area Health Education Center (NW AHEC), a department of the medical school. Dr. Michael Lischke has served as the faculty advisor for the project for the past five years.

C. **Boomer Annual Share the Health Fair**: The Boomer Share the Health Fair is a one-day community health fair held in the summer/fall in Wilkes County and draws populations from two additional surrounding counties -- Alexander and Caldwell. Held at the Thankful Community Center in Boomer, NC, screenings are provided at no charge include screenings for hypertension, diabetes and hyperlipidemia and anthropometric measures/BMI. Health information and education have also been provided. The initial health fair began in 2016 and has served an average of 50 community residents. Financial support for this health fair comes from grants received by the Northwest Area Health Education Center (NW AHEC), a department of the medical school.

D. **Community Service**: Opportunities for community service are also organized and promoted through Student Government, over 30 medical student interest groups, and the Learning Communities(Houses).

E. **Outrageous Courageous Kids**: Several opportunities are available for students to work with pediatric hematology/oncology patients. The “Outrageous Courageous Kids” program of Children’s Cancer Support Services of Brenner Children’s Hospital organizes Peds Pals. Medical students can volunteer to be a “big brother/big sister” for a child undergoing cancer treatment at the Medical Center. Other students work with Child Life Specialists to connect with pediatric inpatients on other services. About 10 students per year participate in Peds Pals. Students visit the child while he/she is in the hospital and provide encouragement and companionship. Additionally, through the Pediatric Interest Group, students volunteer for monthly Ward Visits on the Pediatric Hematology/Oncology unit during which they work with children on arts and crafts projects. Approximately 10 students each month are involved in this effort.

6. **Tracking Students**

Wake Forest School of Medicine maintains information on training and practices activities of its graduates through our Office of Alumni Affairs. Local records are kept in addition the information provided by AAMC about the status of residency training.

7. **Office of Regional Primary Care Education**

Our 1994 report noted the School's responsibility for administration of the Northwest Area Heath Education Center (AHEC). Over the years, the funding from the Northwest AHEC to support faculty and residents in the Department of Family and Community Medicine, Internal Medicine, Pediatrics, Obstetrics and Gynecology, and Psychiatry, and for medical students during their community-based primary care rotations has greatly decreased. In our current fiscal year, the residency education funds have dwindled to primarily support only the Department of Family & Community Medicine. In 1994 AHEC established the Northwest AHEC Office of Regional Primary Care Education (ORPCE) Program to support medical school initiatives in this area. ORPCE staff continues to be extremely helpful in facilitating achievement of the school's primary care education goals.

AHEC Family Practice Residency Programs

Beyond the funding AHEC provides via the residency grants, AHEC also receives an appropriation to support a portion of the operating costs for primary care residency training for programs at the AHEC sites. In 1994 AHEC received new funding to expand training in family medicine in two ways: 1) to create new residencies, with a particular focus on programs to produce graduates likely to enter rural practice; and 2) to expand existing residencies in order to better address the needs of a growing North Carolina population. The following sections provide an update on both the new programs that were created and the expansions of existing programs.

Charlotte AHEC: Atrium Health has one Family Medicine residency training program with 3 sites / tracks: The Elizabeth Family Medicine Track in central Charlotte, has 18 residents (6 per year). Biddle Point, our Urban Track, has 9 residents (3 per year) and the Union Family Medicine, or Rural Track in Monroe is expanding to 9 residents (3 per year) for a total of 36 residents in year. Unique features of the Charlotte program include training in a wide variety of venues (a tertiary care hospital with other residents, a community hospital without other residents, and the Charlotte VA hospital), an urban/underserved track, a rural track and a traditional track. Unique curricular and advanced training features include an advanced Evidence Informed Decision Making curriculum, an Integrative Medicine curriculum as well as sports medicine and geriatrics fellowships. A new psychiatry residency program was established at Carolinas HealthCare System, with a focus on integrating behavioral health into primary care.

Cabarrus Family Medicine Residency: The Cabarrus Family Medicine Residency Program in Concord has a total of 24 residents, (3 classes of 8 residents each). The program graduated its first class of eight residents, in June 1999. Graduates enter a wide variety of practice settings including hospital medicine and full spectrum family medicine. This program is truly a "residency in a practice". Residents are assigned to one of our four full service family medicine practices for their three years of residency. The Cabarrus program has strong hospital training based at Carolinas Healthcare System Northeast. Cabarrus also has a sports medicine fellowship program.

Greensboro AHEC: The Cone Health Family Medicine Residency Program has a total of 24 residents, 8 per year. In alignment with our sponsoring institution, Cone Health, residents learn not only the latest in evidenced-based medicine but also the value equation of high quality outcomes provided in a cost-effective, team-based approach. We work in concert with Triad HealthCare Network, a national leader in Next Generation ACO's to improve the health of our communities. We focus on quality improvement, disease panel management,

population health and team-based care. We have an outstanding Ob experience for our residents and offer an Ob fellowship. We also have strong musculoskeletal training and a Sports Medicine Fellowship. By emphasizing work/life balance and wellness, our goal is to prepare residents to be happy and successful in their future practice of family medicine in a value-based world.

Mountain AHEC: MAHEC's Family Medicine Residency Programs in Asheville (35 residents) and Hendersonville (14 residents) provide an accredited, three-year, postgraduate education program for physicians wishing to specialize in family medicine. MAHEC offers a one year accredited fellowship in Hospice & Palliative Medicine (2 fellows) and Sports Medicine (2 fellows). Also, MAHEC offers a one year non-accredited fellowship in Maternal Child Health (2 fellows) and Rural Family Medicine (2 fellows). Their primary purpose is to improve the quality, quantity, and distribution of primary care physicians in Western North Carolina. Two new residency programs have been accredited: 1) Psychiatry - training residents in integrated primary care practice settings for thee continuous years, and 2) Surgery - focused on training the general surgeon, predominately for rural areas.

South East AHEC: The New Hanover Regional Medical Center Family Practice Residency Program, developed in conjunction with UNC-Chapel Hill and South East AHEC in Wilmington, has a total of eighteen residents, six in each of the three years. This residency was founded in the mid-1990's with the new funding AHEC received from the 1994 General Assembly, along with substantial support from New Hanover Regional Medical Center. Recent additions to the program include an increase of two residents per each year with funding from a HRSA federally funded rural residency training grant. With the ending of the funding from this grant, New Hanover Regional Medical Center has committed to providing ongoing support for these additional six residency positions. The program is also dually accredited in both Allopathic and Osteopathic Family Medicine. The primary goal of the program is to increase the supply of Family Practitioners in rural, southeastern North Carolina, as well as improving the retention of primary care physicians across the state.

Southern Regional AHEC: The Southern Regional AHEC in Fayetteville has a total of 24 medical residents and 2 pharmacy residents. Its mission is to train physicians who remain in North Carolina, choose to care for the underserved, and includes a focus on rural medicine with structured experiences in rural communities. To meet these goals, recruitment is aimed at students with evidence of service to minority, rural, and elderly patients. Truly integrated, the SR-AHEC residency curriculum is an experience that emphasizes interprofessional and collaborative care in all areas of practice, including an ACGME accredited Osteopathic Family Practice Residency track and a PharmD residency located in a NCQA designated Level 3 Patient Centered Medical Home.

Wake AHEC: The Wake AHEC, in association with the Department of Family Medicine at the UNC School of Medicine, has developed training opportunities for UNC family practice residents at WakeMed. There are rotations in numerous hospital-based subspecialties, including pediatrics, general surgery, pediatric emergency medicine, and obstetrics and gynecology. These rotations give residents experience caring for an underserved urban community in a busy technologically advanced medical center in southeast Raleigh.

Nurse Practitioner Programs

Duke University
School of Nursing

*Duke University School of Nursing E*fforts to Increase the Number of Students

Entering Primary Care after Graduation

The Duke University School of Nursing offers three means by which students can complete programs of study that will allow them to practice as Nurse Practitioners (NPs) in primary care. Students may complete a:

- Master of Science in Nursing (MSN) degree,
- Post-graduate Certificate (non-degree) program, or
- Doctor of Nursing Practice (DNP) degree as a post-baccalaureate student.

We prepare nurse practitioners to provide primary care in the following majors: Family NP, Adult-Gerontology Primary Care NP, Women's Health NP, and Pediatric Primary Care NP. Many of our primary care NP students will engage in additional clinical concentrations available including: HIV management, Pediatric Mental Health, Endocrinology, Cardiology, Oncology NP, and Orthopedics. This additional training positions our primary care NP to better care for their primary care patients with specific specialty patient care needs while remaining in the primary care setting ultimately increasing access to care and decreasing time to care delivery for specific diagnoses.

The NP programs in primary care at Duke have the largest applicant pool and enrollment. The enrollment has increased steadily over the past several years. Table 1 below provides data for the last five years for enrollment and degrees conferred for the NP students in the primary care MSN degrees and Post Graduate Certificates.

Although these NP programs are popular and we are committed to continuing them, the number of students we can include in our programs is limited by several factors including:

- the need for qualified faculty in the face of the nursing faculty shortage,
- limited student access to financial resources to support their return to school,
- a shortage of appropriate primary care clinical sites,
- increased competition for clinical sites related to increasing enrollment nationally

The Duke University School of Nursing has been fortunate to participate in the Centers

for Medicare & Medicaid Services (CMS) Graduate Nurse Education (GNE) demonstration project. Funding from this project has been designated by the federal government to help to offset the cost of clinical education (e.g. percentage of productivity loss and revenue reduction) that practice sites and preceptors have typically borne. We have several hundred GNE clinical sites across the US including partnerships with county health departments, community health centers and Planned Parenthood clinics.

In addition to the GNE project, we have secured a 5 year competitively funded VA Nursing Academic Partnership (VANAP) with the Durham VA Medical Center. One aim of this project is to increase the number of Adult-Gerontology Primary Care NP students who are educated specifically with experience in caring for Veteran's Populations. Understanding the large number of veteran's in North Carolina and the specific needs of this population, this primary care training program is much needed and well positioned.

Table 1 presents the number of enrollments and the number of degrees or certificates conferred each year. Enrollments are calculated each Fall, to facilitate comparisons over the five year time period.

There was an increase in the total primary care student enrollment from 263 student in Fall of 2013 to 353 student in Fall 2017. The number of MSN degrees or certificates conferred also increased from 93 in the 2012-2013 academic year to 175 in the 2016-2017 academic year.

Table 1.

Summary of Enrollments and Degrees and Certificates Conferred to New Primary Care Nurse Practitioners by Program For the Last Five Years

Academic Program	Enrollments					Degrees/Certificates Conferred By Academic Year				
	FALL 2013	FALL 2014	FALL 2015	FALL 2016	FALL 2017	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017
TOTAL	263	298	332	348	353	93	96	173	141	175

Submitted by Michael Zychowicz, DNP Professor and Director, MSN Program Duke University School of Nursing

Report to the Board of Governors
University of North Carolina System
And
NC Area Health Education Center

Primary Care Nursing Education 2018 Update

College of Nursing
East Carolina University

Submitted by:

Sylvia T. Brown, EdD, RN, CNE
Dean, ECU College of Nursing

March 2018

INTRODUCTION

Designated a National League for Nursing Center of Excellence and National Hartford Center of Gerontological Nursing Excellence, East Carolina University College of Nursing (ECUCON) is located in the multicultural underserved rural region of eastern North Carolina. The College demonstrates a sustained commitment to promote the health of citizens of North Carolina through the provision of a nursing workforce skilled at providing primary care. Since its inception in 1959, our College of Nursing graduates have worked to improve the health of North Carolina residents through nursing education, research, and practice. While the CON prepares the largest number of baccalaureate generalists in the state, it is the Master's and Doctorally prepared advanced practice specialists that are educated to deliver primary nursing care. The Master of Science in Nursing (MSN) program includes Nurse Midwifery (NM), Neonatal Nurse Practitioner (NNP), and Psychiatric Mental Health Nurse Practitioner (PMHNP) concentrations. The Doctor of Nursing Practice (DNP) program includes specialty focus in either Family Nurse Practitioner (FNP), or Adult-Geriatric Primary Care Nurse Practitioner (AGPCNP) who provide primary care.

Although the ECUCON educates other advanced practice nurse clinicians (nurse anesthetists, and clinical nurse specialists) as well as nurse educators and nurse leaders in the MSN program, and the PhD program prepares researchers/educators/clinicians, this report provides NC AHEC and the UNC Board of Governors with a description of our efforts to maintain the number of primary care providers in the state of North Carolina.

ECUCON PROGRAMS IN PRIMARY CARE

Nurse Midwifery Concentration

The nurse-midwifery education program at East Carolina University College of Nursing (ECUCON) began in 1991 and is the only nurse midwifery program in North Carolina and one of only 40 in the nation. The Certified Nurse-Midwife (CNM) is an individual educated in two disciplines: nursing and midwifery. The CNM graduates with a basic set of skills and behaviors described in the *Core Competencies for Basic Midwifery Practice* which includes the provision of primary health care for women from adolescence through post menopause. The CNM is also prepared to care for the newborn in the first 28 days of life. According to the American College of Nurse Midwives Position Statement on midwives as primary care providers (2012), "CNMs are recognized as primary care providers under existing federal health care programs, including those that address primary care workforce expansion, reimbursement for services, and loan repayment programs." Midwifery education is based on an understanding of health sciences theory and clinical preparation that shapes knowledge, judgment, and skills deemed necessary to provide primary health care management to women and newborns. Therefore, the use of CNMs as primary care providers is integral to the success of the healthcare workforce.

The nurse-midwifery concentration admits 12-14 students per year from North and South Carolina with the majority from NC. The ECUCON nurse-midwifery concentration started accepting students from SC due to the closure of the midwifery education program at Medical

University of South Carolina. We currently have 40 students enrolled in the Nurse Midwifery concentration of the MSN program and 4 post-master's certificate students. Since Spring 2016, ECUCON awarded 23 Nurse Midwifery MSN degrees and 2 post-master's certificates, and 10 more students of this concentration are expected to receive their MSN degrees in Spring 2018.

Admission Criteria for Midwifery Applicants

1. A baccalaureate degree in nursing from a nationally accredited nursing program.
2. A minimum of one year of experience as a RN (preferably in Labor &Delivery)
3. Grade-point average of 3.0 on a 4.0 scale in undergraduate nursing.
4. Acceptable score on the Graduate Record Examination (GRE) within the past five years. GRE requirement waived for those with an earned MSN.
5. Currently non-restricted license to practice as a registered nurse (RN) in North Carolina or a NCSBN-compact state.
6. Statistics course within 5 years and an undergraduate research course.
7. Written statement of purpose demonstrating a passion for serving women in rural or underserved areas.
8. Three written letters of reference from individuals who know the applicant professionally.

Curriculum Focus on Primary Care

The midwifery program has a 3 credit hour course (Nurs 6119) titled "Introduction to Primary Care for the Well Woman" with a clinical rotation of 90 hours. This is the first clinical course the midwifery students take. Primary care content is threaded throughout the curriculum.

Neonatal Nurse Practitioner Concentration

The neonatal nurse practitioner (NNP) program at the East Carolina University College of Nursing is one of thirty-four NNP programs offered nationally, and of that total, one of twenty-one programs offering a fully online curriculum. At present, East Carolina University's NNP program is one of the five largest NNP programs in the nation, with increasing enrollment demand. East Carolina University NNP graduates successfully matriculate through population-specific courses in order to accrue knowledge and skills necessary to provide safe, high-quality care to neonates, infants and the family across the health care continuum.

The nationally board certified NNP participates in a wide variety of complex patient care activities in settings that include, but are not limited to, all levels of neonatal inpatient care in both academic- and community-based settings; transport, acute and chronic care; delivery room

management; and primary care settings (NANNP, 2014). Inpatient NNPs focus on restorative care characterized by rapidly changing clinical conditions, including unstable chronic conditions, complex acute illnesses, and critical illnesses (NANNP; 2014; NONPF, 2004). NNPs functioning in the outpatient setting "focus on comprehensive, continuous care and coordination of services, characterized by a long-term relationship between the patient and PCNP (NONPF, 2011). Increasing focus has been place on promoting the utilization of the NNP congruent with the full scope of the clinician's education, certification, services performed, and population served, not setting or location (NANNP, 2014; NONPF, 2012). We currently have 41 students enrolled in the Neonatal Nurse Practitioner concentration of the MSN program and 6 post-master's certificate students. Since Spring 2016, ECUCON awarded 17 Neonatal Nurse Practitioner MSN degrees and 1 post-master's certificate, and 20 more students of this concentration are expected to receive their MSN degrees in Spring 2018.

General requirements are:

1. A baccalaureate degree in nursing from a nationally accredited nursing program.
2. A minimum GPA of 2.7 in undergraduate studies and a minimum GPA of 3.00 in nursing major.
3. Currently non-restricted license to practice as a registered nurse (RN) in North Carolina or a NCSBN-compact state.
4. A written statement describing the applicant's interest in graduate study, career goals, and the MSN degree's relations to those goals.
5. Three professional references.
6. A personal interview with a member of the graduate faculty.
7. A course in statistics with a grade of "C" or higher and computer literacy are pre-requisites for all concentrations in nursing.

*The GRE & MAT admission entrance exams can be now be waived for the NNP concentration if an applicant holds a current and unexpired RNC-NIC certification or active membership in the Sigma Theta Tau Honor Society of Nursing. Applicant must submit ONE proof or ONE score with application.**

The neonatal nurse practitioner concentration increased its enrollment cap to twenty-four students per graduating class, effective Fall 2016, based upon an ever-increasing volume of applicants. Of the total number of students admitted, 50% are typically residents of North Carolina and 50% out-of-state. Currently 60% are NC residents.

Psychiatric Mental Health Nurse Practitioner Concentration

The psychiatric mental health nurse practitioner (PMH NP) is new to ECU College of Nursing. The first class was admitted in the fall of 2017. This specialty concentration is one of two offered by the UNC system and the only one offered online. Two track options are available, the MSN degree and the Post-master's Certificate. North Carolina is experiencing a mental health and substance abuse crisis with three counties ranked within the top 10 list nationwide for opioid use and overdoses. Ninety-five out of the 100 counties have a critical shortage of mental health

prescribers. Psychiatric Mental Health Nurse Practitioners diagnose, treat, and educate those affected by mental health and substance abuse disorders and are critical in ensuring this marginalized and vulnerable population receive accessible and quality care. PMH NP education includes competencies in neurophysiology, psychopharmacology, psychotherapy, somatic therapies, and interpersonal theory. These competencies are congruent with professional nursing standards and include *The Essentials of Master's Education in Nursing* (AACN, 2011), *Criteria for Evaluation of Nurse Practitioner Programs* (NTF, 2012), *National Organization of Nurse Practitioner Faculties Core Competencies* (2012), *Psychiatric Mental Health Nurse Practitioner Competencies* (NONPF, 2013*), and Psychiatric Mental Health Nursing: Scope and Standards of Practice* (American Psychiatric Nurses Association, 2014). Extensive clinical practicum components totaling 550 hours are required with specific patient population foci.
We currently have 9 students enrolled in the Psychiatric Mental Health Nurse Practitioner concentration in the MSN program and 10 post-master's certificate students.
Priority admission status includes those with psychiatric nursing experience and those who plan to practice as PMH NP's upon graduation.
Out of state applications are not accepted at this time due to the critical need in North Carolina.

Admission Requirements

- A baccalaureate degree in nursing from an accredited program
- A minimum GPA of 3.0 in nursing major
- Acceptable score on the Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) within the past five years
- Current, non-restricted license to practice as a registered nurse (RN) in North Carolina
- One year experience as a registered nurse (RN)
- Three professional references with at least one reference from a nurse practitioner
- A statement of purpose essay describing the applicant's interest in graduate study, career goals, and the specific pursuit of this specialty
- A current resume
- A personal interview with a member of the PMH NP faculty
- A course in statistics with a grade of "C" or higher

BSN to DNP (Family Nurse Practitioner and Adult Gerontology Primary Care Nurse Practitioner)

The doctor of nursing practice (DNP) degree is a practice-focused terminal degree earned by specialists in advanced nursing practice. The DNP is offered online and focuses on developing nursing experts in translating and applying research findings into clinical practice rather than in generating new knowledge. The DNP is offered as a post-master's option as well as a post-baccalaureate (BSN to DNP) option. The post-master's DNP curriculum can be completed in 36 semester hours and expands the competencies of the advanced practice registered nurse (APRN) from the master's level to encompass knowledge required as nurse leaders in increasingly complex healthcare systems to assess published evidence informing practice, improve systems of care to improve healthcare outcomes, and to make changes to enhance the quality of care.

Beginning fall 2016, applicants who have an earned MSN in Nursing Leadership or Nursing Administration will be admitted to the post-master's DNP program. The post baccalaureate DNP curriculum offers specialty foci options initially limited to the adult gerontology nurse practitioner (AGPCNP) and family nurse practitioner (FNP) foci. The AGPCNP program of study requires 67 semester hours inclusive of 896 clinical practice hours while the FNP program of study requires 71 semester hours inclusive of 896 clinical practice hours.
The post-BSN to DNP program admits approximately 25 students each year in the adult-gerontology primary care nurse practitioner (A-GPCNP) and family nurse practitioner (FNP) specialty foci options, respectively. Preference is given to those who demonstrate a capacity for creative inquiry, critical thinking, scholarship, and leadership. In the case of equally qualified applicants, preference will be given to individuals who intend to pursue doctoral study on a full-time basis. We currently have 118 students enrolled in the post-BSN DNP Program. Since Spring 2016, ECUCON awarded 22 post-BSN DNP degrees, and 23 more students of this program are expected to receive their DNP degrees in Spring 2018.

Admission Criteria

8. A baccalaureate or higher degree in nursing from a nationally accredited nursing program.
9. A minimum of one year of experience as a RN within one year of the application deadline.
10. Grade-point average of 3.2 on a 4.0 scale on all graduate work.
11. The Graduate Record Examination is waived for applicants with a GPA at 3.4 or higher, or for those candidates who hold an earned MSN. The GRE is the only entrance accepted for this concentration.
12. Currently non-restricted license to practice as a registered nurse (RN) in North Carolina or a NCSBN-compact state. International applicants must work with the Commission of Graduate of Foreign Nursing Schools to validate credentials before applying for RN licensure.
13. Satisfactory performance on Test of English as a Foreign Language (TOEFL) scores where English is not the first language. Students on foreign student visas must present evidence of professional standing in their respective countries.
14. Any Graduate level inferential statistics course within 5 years.
15. An undergraduate research course.
16. Basic Computer competency with proficiency in development and use of databases, patient information systems, statistical sets, and use of various statistical packages for data analysis.
17. Written statement of personal career, educational, and scholarship goals; identification of practice interests, leadership goals and match with program goals.
18. Three written professional references from individuals with expertise to comment on the applicant's capability for doctoral scholarship (for example, university professors, employers) - At least one of the references must be from a doctorally prepared nurse.
19. A current curriculum vita.

20. A representative E-portfolio limited to no more than 25 pages demonstrating evidence of professional practice accomplishments, community service and scholarship. This must also be submitted electronically through the university graduate school application portal.

Post Master's DNP Program

The post-master's DNP program admits approximately 20 students each year. Applicants are evaluated in five areas: GPA, GRE, references, essay, and interview. Completed applications are considered in a competitive review process. Preference is given to those who demonstrate a capacity for creative inquiry, critical thinking, scholarship, and leadership. In the case of equally qualified applicants, preference will be given to individuals who intend to pursue doctoral study on a full-time basis. We currently have 40 students enrolled in the Post Master's DNP Program. Since Spring 2016, ECUCON awarded 36 post-master's DNP, and 20 more students of this program are expected to receive their DNP degrees in Spring 2018.

Admission Requirements for the Post-Master's DNP

- One official transcript from each college or university attended.
- A master's degree in nursing in an advanced practice registered nursing (APRN) specialty (nurse anesthesia, clinical nurse specialist, nurse midwifery, nurse practitioner) with evidence of completion of graduate level pathophysiology, pharmacology and advanced physical assessment courses from an accredited school. A MSN degree with a focus on Nursing Leadership or Nursing Administration will be required for the Post-Master's DNP in Nursing Leadership.
- Certification as an APRN (if applicable).
- The applicant must meet all other requirements described previously in the BSN to DNP section.

PRECEPTOR/MENTORING ACTIVITIES

Preceptor and mentoring activities are an integral component of all programs focused on primary care at ECU. The focus of these activities is to provide students the opportunity to work closely with practicing experts in the discipline. ECU faculty work closely with preceptors to ensure optimal results. Examples of activities:

- Preceptors receive online education/orientation for successful mentoring relationships.
- Faculty visit students and preceptors at clinical agencies to foster relationships and verify student learning outcomes.
- UNC Online Mentoring Services are available

- Communication with preceptors occurs several times throughout the semester through weekly evaluations, phone calls and e-mails.
- An e-mentoring program for midwifery students has been developed. This initiative links current midwifery students to practicing midwives, providing them an opportunity to connect with experienced practitioners who can provide real-world advice about midwifery practice.

RESEARCH IN PRIMARY CARE

Areas of current faculty research include, but are not limited to the following areas in primary care:

- Interprofessional healthcare
- Health concerns of rural populations, particularly those persons employed as farmers, fishers and loggers
- Congestive heart failure
- Geriatric prescribing in the geriatric population
- Pica use in pregnancy
- Pregnancy-outcome determination
- Effectiveness of an intervention for antepartum depression
- Health Policy
- Nurse practitioner regulatory processes

IT SERVICES

Information technology services are offered from dedicated staff within the College of Nursing. This department serves as much more than technical support for faculty and students; they are often partners in research and development. This partnership developed and implemented a novel virtual clinic to simulate diverse learning scenarios reflected in culturally diverse clinical settings.

The CON has eight state-of-the-art Concepts Integration Laboratories (CIL). The CIL fosters excellence in the preparation of professional nurses by assisting students of all levels to integrate nursing science concepts and critical thinking skills in the practice of quality patient care. The structured and open laboratory experiences assure that nursing students have access to basic and advanced learning technologies which enable them to competently perform essential nursing interventions in diverse healthcare environments.

SELF-DIRECTED LEARNING ACTIVITIES

ECU students are afforded the opportunity to learn in ECU's Office of Clinical Skills Assessment and Education (OSCAE) in the physical assessment course as well as the clinical

courses. Standardized patients are used as an objective measurement of student learning outcomes in the diagnosis and treatment of common primary care illnesses. The OSCAE staff are also partners in the implementation of Interprofessional Education.

COLLABORATIVE EFFORTS WITH LOCAL COMMUNITIES

In addition to the other community/clinical resources students complete immersive clinical rotations in rich, primary care settings where they receive experience in the management of primary care and multiple chronic conditions (MCC). Examples included but are not limited to James D. Bernstein Community Health (JDBCHC), Goshen Medical Centers (GMC) and Robeson Health Care Corporation (RHCC). All of these clinical agencies are established Federally Qualified Health Centers (FQHCs) where low-income, uninsured, or medically underserved rural families can receive care on a sliding fee scale. These FQHCs have an established track record of partnering in the clinical education of students from ECUCON, Brody School of Medicine, College of Allied Health Sciences, Medical Family Therapy, Social Work, and Dentistry, and in these agencies students learn collaboratively in the management of MCC in primary care. The partnerships with JDBCHC, GMC and RHCC are examples that strengthen the diversity of our community linkages.

The ECUCON contracts a full time CNM position with the Pitt County Public Health Center to provide prenatal care and family planning services to the clientele. This faculty practice is used each spring and summer as a gynecology and antepartal clinical site for the students.

CHALLENGES

While the CON's growth and expansion has been limited in recent years by state budget reductions, we have successfully established a DNP program and an online family psychiatric/mental health nurse practitioner option in the MSN program while maintaining our enrollment in primary care concentrations. Since the last report of 2016, the enrollment in the specialty population focus areas of advanced practice nursing has grown by 47 % from 182 students in spring 2016 to 268 in spring 2018. Challenges remain in obtaining clinical site placements due to the increasing number of schools providing payment for preceptors and clinical sites and increasing competition from online programs that are based outside of NC but have students from NC enrolled in their programs. An additional challenge is the need for qualified faculty while experiencing a nationwide nursing faculty shortage.

CONCLUSION

This 2018 report from the ECU College of Nursing demonstrates our commitment to preparing advanced practice nurses that will help to meet the healthcare needs of citizens in our region and state. The market demand for advanced practice nurses continues to rise as the Affordable Care Act is implemented, our population ages, and the nursing workforce ages. With the vast needs in our rural communities in eastern NC, comes a greater responsibility to provide services to fulfill our mission to serve as a national model for transforming the health of rural underserved regions

through excellence and innovation in nursing education, leadership, research, scholarship, and practice. We remain committed to this mission as we prepare a workforce to meet the healthcare needs our citizens.

Gardner-Webb University

Hunt School of Nursing

MSN – Family Nurse Practitioner Program

Primary Care Report for NC AHEC

March 2018

Submitted by Anna S. Hamrick, DNP, FNP-C, ACHPN, Director of Family Nurse Practitioner Program upon request from by Nicole Waters, RN, Dean of the Hunt School of Nursing

- Program Overview:

The Hunt School of Nursing (HSON) consists of four programs. – Associate Degree in Nursing (ADN), Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN) and the Doctor of Nursing Practice (DNP). The BSN includes the traditional (TBSN), Accelerated BSN (ABSN) and RN completion (RN-BSN) tracks. The MSN program includes the nurse education, nurse administration, and family nurse practitioner (FNP) tracks, and the MSN/MBA dual degree program. The DNP program is a Post-Masters entry with a focus on leadership development. GWU School of Nursing maintains continuing accreditation from the American Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA, 30326, 404-975-5000.

The Hunt School of Nursing is a part of the College of Health Sciences which includes the HSON, Physician Assistant Studies Program, Athletic Training Program and Exercise Science Program. All programs share teaching space and state of the art simulation labs.

The MSN – Family Nurse Practitioner (FNP) and Post-Masters FNP certificate programs were added to the curriculum offerings in 2013. The first graduating class was in May 2015, we have now graduated 3 cohorts, totally 93 alumni.

MSN FNP courses are offered in a hybrid format with at least 50% of contact being on campus in Boiling Springs, NC. Students attend 4-6 campus days per semester typically scheduled on Fridays and/or Saturdays. The MSN – FNP program requires 51 credit hours for completion and the Post Masters FNP Certificate requires 36 credit hours.

Students are required to have 630 direct patient care hours with a preceptor prior to completion of the program. Clinical practicums are organized with preceptors including Nurse Practitioners, Physician Assistants, MD/DO, and Certified Nurse Midwives. Preceptors are from a variety of settings in North Carolina, South Carolina, and Kentucky. A Clinical Site Specialist position was added in January 2016 to help facilitate practicum experiences for Family Nurse Practitioner students as well as the Gardner-Webb University School of Physician Assistant Studies.

- Enrollment

Admissions applications are accepted and reviewed in spring for fall cohort enrollment. Interest in the FNP program and application yield has been competitive. Fall MSN – FNP cohorts are capped at 24 students, effective with the Fall 2014 cohort. Spring Post-MSN FNP Certificate cohorts are capped at 6 students. In 2014 and 2015, 30-35% of applicants have were offered acceptance. In 2016-2017, 42% of applicants were offered acceptance.

Admission Criteria requires applicants hold a baccalaureate degree in nursing with GPA of 3.0 on all undergraduate work. Satisfactory scores are required on either the Graduate Record Examination (GRE) or the Miller Analogies test. Official transcripts including undergraduate or graduate statistics, three letters of professional reference, RN licensure verification, and satisfactory criminal background check are required in the application portfolio. RN's with a baccalaureate degree in another field are considered for acceptance with completion of a baccalaureate level nursing health assessment and community health nursing course. Registered Nurses are expected to have 2 years of RN experience prior to matriculating into the program.

All students currently enrolled are residents of primarily North Carolina and South Carolina.

Current Enrollment (as of 3/6/2018):

Semester Admitted	**Type of Enrollment**	**Currently Enrolled**	**Planned Graduation**
August 2015	MSN – FNP	24	May 2018
January 2016	Post Masters FNP Cert	5	May 2018
August 2016	MSN – FNP	22	May 2019
January 2017	Post Masters FNP Cert	7	May 2019
August 2017	MSN – FNP	24	May 2020
January 2017	Post Masters FNP Cert	6	May 2020

- Program Opportunities and Challenges

Clinical Site Placement: Family Nurse Practitioner students are trained for entry level into primary care practice. However due to increasing demands for clinical preceptors the challenge of placing students in appropriate clinical practicum sites exists each semester. Specific clinical practicum rotations in pediatrics and women's health are scarce. Development of clinical training sites for pediatric and gender specific needs attention. One full time employee has been hired as a Clinical Site Specialist focused on placement of NP students into practicum rotations.

Historically graduate nursing education has not offered monetary compensation for nurse practitioner preceptors. Medical student preceptors and Physician Assistant preceptors are increasingly providing compensation and also utilizing the same preceptor pool as Nurse Practitioner students. One of our largest health system partners now requires a set fee for use of preceptors within their clinical system. $500 is required per preceptor hours of 1-240 and $1000 for 241-500 practicum hours. The increasing pressure to pay preceptors in order to stay competitive in clinical placement for Nurse Practitioner students is a challenge for not only our program but a regional and national issue. This additional cost will be a barrier with direct impact to students. At this time we have not required students to directly pay preceptors and have allowed for this in our budget but ultimately it increases tuition.

UNC-Chapel Hill School of Nursing
Primary Care Nurse Practitioner Preparation and Productivity

Submitted at the request of

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

Program Overview:

The School of Nursing at UNC-Chapel Hill prepares primary care Nurse Practitioners (NPs) via three programs: Master of Science in Nursing degree (MSN; includes both RN to MSN and BSN to MSN students), Post-Master's Certificate Program (Post-MSN) and the BSN to DNP pathway of the Doctor of Nursing Practice degree (DNP).

Master of Science in Nursing (MSN). The MSN NP program educates BSN prepared nurses for primary care roles in varied rural and urban settings, including: ambulatory clinics, home health care agencies, long-term care facilities, retail clinics, nurse managed clinics/practices, and physician managed private medical practices. Students are educated to deliver culturally sensitive primary care services as Adult-Gerontology, Family, Pediatric, or Psychiatric-Mental Health Nurse Practitioners. Full-time study in the MSN NP program ranges between 41and 50 credit hours taken across two academic years and one summer.

The MSN program builds upon the advanced practice core curriculum originally outlined in The American Association of Colleges of Nursing's Essentials of Master's Education (AACN, 1996) http://www.aacnnursing.org/Education-Resources/AACN-Essentials. To coincide with IOM recommendations, the curriculum prepares graduates to provide care based on continuous healing relationships, patient's needs and values, honoring the patient's control of his/her own health, shared provider patient knowledge and communication, evidence-based decision making, transparency, anticipation of patient needs, safety, cost containment, and cooperation among clinicians. MSN NP students complete core courses on professional issues, research and evidence appraisal, advanced clinical skills, and advanced specialty knowledge related to their population track.

Graduates are prepared to diagnose, order, and interpret diagnostic tests; order and provide therapeutic interventions and medications; provide health teaching and counseling; and collaborate with patients, families, and other health professions. They also learn about community resources as well as legal, ethical, diversity, health disparities, health literacy, socioeconomic and political issues related to the NP role. MSN NP students take courses in advanced pathophysiology, advanced health assessment, advanced pharmacotherapeutics, clinical management of acute and chronic illness, population health and epidemiology, and health promotion and disease prevention. All students are prepared to provide primary care services within a community perspective. Student clinical preceptorships are in primarily underserved and disadvantaged areas that commonly provide inter-professional collaborative learning opportunities. All clinical sites and preceptors are evaluated each semester through faculty clinical site visits as well as faculty and student written feedback. Clinical sites and preceptors that are evaluated by students and faculty as providing relevant and positive learning

experiences are retained for future clinical learning opportunities.

RN-MSN. RN-MSN applicants must complete 51 college-level credits prior to enrollment in the RN-MSN program, which may be taken at any accredited college or university. Once these college-level credits are completed, registered nurses with an Associate's Degree or Diploma in Nursing may apply directly to the RN-MSN Program. After 12 credits of online baccalaureate bridge courses are completed, a minimum of 41-50 credit hours of graduate study is required (depending on the population selected). Students may focus their primary care NP preparation on one of four populations: Adult-Gerontology, Family, Pediatric, or Psychiatric-Mental Health. Coursework and clinical requirements are the same as outlined in plans of study for the MSN program.

Post-MSN. Post-MSN certificate programs are designed to prepare nurses who have already earned a master's (or higher) degree to assume a new advanced practice role and responsibilities not covered in their initial nursing graduate education. The NP option currently available is Psychiatric-Mental Health. Post-MSN course and clinical requirements vary based on previous credits earned and previous area of specialization, but generally require a minimum of one year fulltime study (typically, 20 to 30 credit hours).

Doctor of Nursing Practice.
The BSN to DNP program of study builds on baccalaureate education and expands current MSN education to prepare nurses for clinical leadership, practice inquiry, and advanced nursing practice as a primary care NP (http://www.aacnnursing.org/Education-Resources/AACN-Essentials). DNP program students complete all courses described above for the MSN and receive additional preparation in such key areas as evidence-based practice, systems leadership, population health, patient safety, and translational research with the goal of improving population health status and outcomes. These students complete 3 years of full-time study, ranging from 66 to 75 credit hours depending on advanced practice preparation area.

Students are prepared as primary care NPs in the same population foci as the MSN students: Adult-Gerontology, Family, Pediatric, and Psychiatric-Mental Health. BSN to DNP students are required to complete 1,000 practice hours along with additional coursework in nursing leadership and practice-based inquiry. Students will become experts at evaluating and translating evidence into effective changes at the population level. These changes enhance the outcomes of care, effectiveness of care delivery, and reduce health disparities. All BSN to DNP students must complete an evidence-based practice project (DNP Project) that addresses an identified clinical need related to advanced nursing practice and must benefit a group, population or community rather than an individual patient. These projects often arise from clinical practice and may be done in partnership with a clinical agency, organization, or community group.

Admission criteria:

- BSN to MSN and BSN to DNP applicants must be licensed as a Registered Nurse, have a minimum of one year clinical nursing experience, have an earned nursing GPA of 3.0, submit academic and employment letters of recommendation, and prepare a professional statement exploring professional history, contributions, goals for graduate study, and career plans.

- Criteria for the RN to MSN candidate – nurses with an associate's degree or diploma in nursing –include the criteria noted above plus an additional 51 pre-requisite credits representing a broad general education preparation similar to credits required in the first two years of a baccalaureate degree.

Admission and graduation data:

We have been quite successful in recruiting strong students to the NP programs and increasing admissions when budget and clinical practice sites could support additional capacity. We are also graduating high numbers of NPs who enter the workforce well prepared and secure positions within three to six months post-graduation. Over the past ten years, over 93% of graduates have completed NP programs of study. The attrition rate during this period is just under 6.5%.

Time to graduation and post-graduation certification:

School programs preparing primary care NPs have a successful history of students graduating on schedule (BSN to MSN: full-time study over two years and part-time over three years; RN to MSN: full-time study over three years and part-time over four years). Over the past five years, the average MSN student's time to degree has ranged from 2.2 to 2.5 years. Additionally, the School's national certification pass rate of NP graduates exceeds the CCNE accreditation threshold of an average of greater than 80% over 3 years.

Post-graduation employment:

Graduates from the SON have a long history of service to underserved populations. Most of our students are NC natives, and many return to their home communities for employment post-graduation. As the following table reflects, employment by our graduates in settings of service to underserved communities is consistently high (>55%). In 2016 however, we saw a drop in the number of NP graduates whose first positions were in a primary care practice. A number of these graduates served a chronic care population. This outcome was repeated this past year but to a lesser extent. Twelve NP graduates in 2016 and 15 NP graduates in 2017 practiced in rural and suburban communities, providing care to disadvantaged residents, however due to the current definition of primary care, they weren't included in the number of graduates practicing in primary care as noted below. Had they been, based on a more contemporary definition which includes management of population health, 73% of our 2016 graduates and 79% of 2017 graduates would be denoted as serving in communities and/or with populations of need. The remaining 20-25% of graduates were employed in acute care practices or have chosen to remain unemployed. This is consistent with recent trends in NP service in NC. An analysis of NP practice in 2011 (Fraher, 2014) found that 80% of NC NPs were certified in primary care, however 57% self-reported caring for special patient populations.

Practice Settings	01/01/10-06/30/11	07/01/14-06/30/15	07/01/16-06/30/17
Comm. Health Ctr.	4	3	4
Rural Health Clinic	0	0	2
Federally Qualified HC	2	1	2
State/Local Health Dept.	1	0	0
HPSA	50	18	23
Underserved Communities	6	28	25
Other Primary Care			10
Federal/Military			5
Acute Care Settings			16
LTC/Hospice			4
Not employed			11
Total Graduates	68	85	102
# in PC Practice Settings	63	50	66
% in Practice Settings	92.6%	59%*	65%**

Diversity:

Recruitment: Our goal is to produce NP graduates who will represent the communities from which they came and enable the NP workforce to be more representative of the NC population. Recruitment is focused on targeted rural, under-represented, disadvantages communities, MUAs, and HPSAs. We work closely with HBCUs and community colleges across NC to create partnerships that will build mutual respect, encourage understanding, foster interpersonal and academic confidence, and cultivate academic success for those who seek careers in nursing. Over the past five years, 27-35% of enrollees in UNC's primary care advanced practice programs are from underrepresented minority or disadvantaged communities. This represents a significant increase from the average 10-11% of ten years ago. Despite the increase noted, our goals of graduating NPs that represent the citizen of NC hasn't been met; recruitment efforts continue with foci on pipeline development and enhancing partnerships with targeted communities.

GREs: Our goal is to increase diversity within all of our graduate programs. There is evidence the GRE has a bias impact with regards to certain populations, especially minorities and, as such, is considered a barrier to applicants. In 2014 we sought approval from The University's Graduate

School to place a 5-year moratorium on the GRE as a component of the application process for the three graduate programs (MSN, DNP, and PhD). We have submitted a midpoint review to the Graduate School. We will continue to review the effects of elimination of the GRE on the diversity of the applicant pool and continued success of our graduate students. At the conclusion of the 5-year period, the GRE requirement will be re- evaluated as an admission criterion for our graduate programs.

Student support:

Office of Inclusive Excellence (OIE). In 2016, the School changed the name of its Office of Multicultural Affairs to The Office of Inclusive Excellence. In August 2017, the Dean appointed an Assistant Dean of Inclusive Excellence (AD-IE) and a Faculty Advocate to serve as consultants for teaching strategies and curriculum resources for providing culturally sensitive care. This includes the facilitation of system-wide efforts for retaining students, faculty, and staff of underrepresented racial and ethnic populations. A key goal of the OIE is to enable the SON to meet the demand for professional nurses who deliver care that is compatible with and highly sensitive to the cultural beliefs and health practices of patients throughout NC and around the globe. The AD-IE or Faculty Advocate may be contacted about any diversity issues encountered by students, faculty, and/or staff. The office provides students with assistance with class assignments, research formulation, self-awareness, test taking skills building, advising, mentoring, coaching and personal needs specific to being a minority (race, ethnicity, age, or sexual orientation) or disadvantaged student immersed in a predominantly white culture.

Campus resources**:** The University's commitment to the success of all students is most evident in the extensive resources provided. The Learning Center at the UNC-Chapel Hill offers many services to enhance student learning and success. These include: academic counseling, tutoring, reading efficiency skills training, coaching for studying, note-taking, and test-taking. The Learning Center (http://learningcenter.unc.edu/) works with students being evaluated for a learning disability and consults with students registered with the Office of Accessibility Resources and Services regarding needed accommodations. The Learning Center offers a specific program for students with Learning Disabilities (LD)-Attention Deficit Hyperactivity Disorder (ADHD) entitled *The Academic Success Program for Students with LD/ADHD (ASP)*. This program focuses on developing strategies to manage volume of academic responsibilities, manage time efficiently, balance academic responsibilities with personal life, and communicate more effectively with professors/advisors. The Writing Center is a free instructional service provided to faculty and students. The support provided includes trained student coaches who help students focus on the writing process, learn new skills for various writing contexts and strategize about options available for completing assignments.

Student funding:
AENT Program: From 2011-2017 the School of Nursing received continual grant funding from HRSA in support of primary care NP education (ending June 30, 2017). Through this effort 16-20 graduate NP students were annually provided traineeship support ($11,000-22,000 each) which reduced their need to remain employed thus enabling them to complete their program of study in shorter time. The students, in return, committed to serving as primary care NPs in NC post-graduation. Eligibility criteria included: member of a racial or ethnic minority population, have served in the military, educationally or financially disadvantaged, and/or resident of a rural

area, medically underserved community or health professional shortage areas.

ANEW funding: The AENT grant program evolved in 2017 to the Advanced Nursing Education Workforce grant (ANEW) for which the School of Nursing successfully completed. This funding, also from HRSA (2017-2019) supports innovative academic-practice partnerships to prepare primary care advanced practice registered nursing students through academic and clinical training to practice in rural and underserved settings post-graduation. The partnership supports traineeships as well as infrastructure funds to schools of nursing and their practice partners who deliver longitudinal primary care clinical training experiences with rural and/or underserved populations. The School's ANEW project, "Partners in Practice, Engagement, & Education in Rural NC: Preparing Nurse Practitioners for Behavioral Health Integration in Primary Care" will recruit, educate, train, support and place upon graduation, a minimum of 12 primary care nurse practitioners (family, pediatric and adult/geriatric) to implement clinically competent and culturally sensitive integrated physical/behavioral healthcare to some of the most vulnerable individuals and families in NC. This project will impact individuals and their families who are medically underserved and frequently experience a disproportionate number of health disparities and comorbid diseases including diabetes, hypertension, obesity, cancer, behavioral health (depression/anxiety) and substance use disorders. The School has partnered with Goshen Medical Center, Inc. (GMC) in this project. GMC is *a federally qualified community and migrant health center organization serving the residents of eastern North Carolina since 1979. GMC is the largest community health center system in NC; counties served include: Duplin, Sampson, Wayne, Brunswick, Columbus, Craven, Cumberland, Harnett, Jones, Onslow and Richmond.*

UNC Prime Care: The School of Nursing collaborated with the School of Social Work to successfully compete for a four-year, HRSA-funded Behavioral Health Workforce Equity Training grant ($1.9 million) in 2017. The UNC-PrimeCare program is expanding the behavioral health care workforce by training 116 core students committed to serving in integrated care settings in medically underserved areas and populations (MUA/P) and engage students and providers in psychology, medicine, and pharmacy for continuing education opportunities in integrated behavioral health. The UNC-PrimeCare collaboration between the UNC-Chapel Hill School of Social Work (SSW) and the School of Nursing (SON) is particularly strong given that these UNC Schools share a common mission, values, and goals to educate, research, and serve. The first cohort of SSW and SON students will graduate in May 2018, and the second cohort has been recruited.

To achieve the goal of expanding the behavioral health workforce, **UNC-PrimeCare** will be guided by two aims: 1) To enhance the existing MSW and PMHNP curriculums through the addition of specialized training in providing behavioral health services in integrated health settings through (a) enhanced course work, (b) integrated field placements in medically underserved and HPSA mental health shortage areas, and (c) supplemental seminars to reinforce the Core Competencies for Integrated Behavioral Health and Primary Care and interprofessional teamwork; and 2) To offer interprofessional development and continued education across campus and North Carolina through a newly developed collaborative called

the Interprofessional Leadership Institute for Behavioral Health Equity (ILI-BHE). The ILI-BHE aims to improve behavioral health care by reducing health disparities by: (a) engaging students across multiple disciplines in interprofessional, community-based clinical learning activities; (b) supporting current behavioral health providers and educators **(**faculty and clinical preceptors) who are providing culturally relevant clinical and didactic education to students (e.g., continuing education seminars on interprofessional and primary behavioral health in underserved communities); and (c) enhancing workforce diversity by supporting students from underrepresented groups to obtain professional careers in behavioral health care, policy, and leadership.

Barriers to increasing the number of graduates:

Clinical site placement The SON currently uses over 500 clinical sites for MSN, Post-MSN and DNP student placements. NC is a predominantly rural state: 80 of 100 counties are designated as rural, with 95 counties designated as partial or total MUA and 90 as partial or total HPSA. Graduate clinical sites are selected to meet the learning objectives of the individual course and ultimately the program objectives. Criteria that factor into selection of a clinical site include: level of student, the focus of the course, competencies expected, availability of preceptors, previous years' evaluations of the preceptor and site, the distance required for student travel, and opportunity to practice with underserved populations. The NC Area Health Education Center (AHEC) assists the SON in finding primary care clinical placements across the state; many are in rural communities, MUAs and HPSAs. In 2015-16 approximately 75% of NP clinical primary care placements were in counties or geographic areas designated as rural, MUA or HPSA. Our goal for 2018-2019 is to increase the percentage of NP students completing a clinical assignment in a designated rural health center, federally qualified health center or other HPSA serving underserved communities to 85%. The aforementioned newly funded projects will greatly assist us in reaching this goal.

Obstacles: Currently, one of our greatest obstacles for increasing student enrollment is the issue of clinical placement capacity. Clinical facilities and practices often predominantly offer clinical training on a volunteer basis. The issue of clinical placements is complex and varied among the health professions, however, the state of NC must confront the causes of capacity issues that we are facing in the nurse practitioner program area. Although we have had discussions with external practice agencies we have been told that the student placements they prioritize are those focused on preparing medical students, residents, and physician assistant students. In addition, primary care settings, in contrast to acute care settings, are not able to provide placements for a large number of students. Thus, settings are scarce that can provide experiences for nurse practitioners as a whole as well as those focused on women's health, pediatrics, psychiatric-mental health and for the more in-depth capstone experiences. There is also increasing competition from online programs that are based outside of North Carolina but have students from NC enrolled in their programs. If clinical placement capacity is saturated then all of professions, as stakeholders in addressing the primary care workforce, must find new ways to grow precepting capacity within sites or find new placement and clinical learning options.

Additionally, the SON makes every attempt to locate and assign students to clinical sites as near their home community as possible to ensure the student travel time to 1.5-2 hours (one-way).

This has become increasingly difficult due to the large and growing numbers of clinical programs across NC vying for clinical practica arrangements. At this writing, NC has 8 graduate schools of nursing preparing primary care NPs as well as 11 physician assistant (PA) programs that are in competition for many of the same clinical preceptors and agencies, especially those in rural and underserved areas. The SON employed a Graduate Clinical Sites Coordinator (GCSC) (85% time) through January 31, 2018. As of academic year 2017-18, designated lead faculty in each of the NP population areas assist in identification of high-quality preceptors and agencies. The MSN program leadership participates in the AHEC meetings which involves representatives from all the UNC campuses regarding preceptors and clinical sites. Given the challenges related to locating and securing clinical sites, the SON incorporates strategies to retain existing and engage new preceptors, including enhanced connections with our NP program alumni to recruit them to serve as preceptors in their primary care practices and offering opportunities for adjunct faculty appointments for clinical preceptors who demonstrate commitment to contributing to the clinical education of our NP students.

Additionally, the SON is committed to building our Faculty Practice Plan with a focus on primary care clinics. The first SON-owned/operated clinic, Carolina Community Clinic, opened in Hillsborough in 2017. This clinic, and all subsequent versions, will serve as placement sites for our students. Additionally, the SON has successfully recruited and hired new NP faculty who are engaged in primary care practice in rural, underserved areas of the state. Most recently, practice contracts have been developed for DNP-prepared faculty with two Federally Qualified Health Centers located in neighboring counties. Such arrangements will increase the School's network of providers and primary care agencies which will notably contribute to the primary care education of our students

UNC CHARLOTTE
College of Health and Human Services

Programs:

The University of North Carolina at Charlotte offers two graduate programs, which allows students to practice as nurse practitioners (NPs). Students may complete the following:

1. Master of Science in Nursing (Advanced Clinical Track)
2. Post-masters certificate

We offer two concentrations for the nurse practitioner: family and acute/gerontologic. The focus of this report is the family nurse practitioner program whose role is primary care. We continue to experience large number of applicants to these programs, but face challenges to admission due to a variety of factors such as:

1. Qualified faculty to teach in these programs
2. Competition from online programs for clinical sites
3. Substantial payment of preceptors by private Universities
4. Lack of resources by students to afford returning to school

Admission Criteria for the Family Nurse Practitioner

- ✓ Unencumbered license as a Registered Nurse in North Carolina.
- ✓ Baccalaureate degree from an accredited university.
- ✓ Overall GPA of 3.0 on a 4.0 scale in the last degree earned.
- ✓ Completion of an undergraduate statistics course with a grade of C or better.
- ✓ A statement of purpose, describing the applicant's experience and objective in undertaking graduate study in the chosen specialty. The statement of purpose should explain the applicant's career goal in relation to primary care and family practice. (not to exceed 2 double spaced pages)
- ✓ The three letters of recommendation required by the Graduate School should be from professional colleagues and should speak to clinical knowledge and expertise and one's ability to function as a member of the health care team. At least one reference from a supervisor is preferred.
- ✓ One year of experience as a professional nurse at the time of application.

The GRE has historically been required for admission to graduate programs. However, GRE scores have not proven to be a large factor in success of students within nurse practitioners programs. Nurse practitioner programs across the nation have waived the GRE requirement. We have followed this trend and continue to see our students as successful through low attrition rates

and remaining above the national average for passing national certification exams required for practice.

Curriculum Focus on Primary Care
The focus of primary care is threaded throughout our curriculum. Students are required to complete a minimum of 600 hours of practicum/clinical in primary care sites. These sites include reproductive/women's health, adult health, pediatrics, and family practice. Students are placed in health professional shortage areas, rural areas, health departments, and community free clinics across the state.

IT Services
UNC Charlotte is fortunate to have IT services within College of Health and Human Services. Both faculty and students have access to this service. Students and faculty also have access to an IT helpline, which assist with IT needs via email or phone. IT assists with many of the students needs throughout the program. One example is students are required to complete a health assessment video. IT provides video cameras for this assignment, which lessens the burden on the student. Another example of IT support is through our online learning platform, Canvas. This learning platform has a 24-hour hotline for faculty and student. Additionally, the College of Health and Human Services has a library liaison that assists with students and faculty needs. The library liaison has drop in office hours set up in the building where students receive assistance with a variety of services often accessed online.

New Faculty/Development
Our faculty consists primarily of four full-time certificate family nurse practitioners with various interests in primary care. This group offers many years of experience and a variety of experience for the primary care student. Our faculty continues to seek educational opportunities both related to teaching and primary care. We continue actively presenting our findings to the community, regionally, nationally, and internationally.

Student Support/Incentives
We received $5000.00 and $2000.00 scholarships from Minute Clinic for student support. In addition, we received AHEC funding for preceptors. Students also receive internal funding from scholarships within the School of Nursing. In addition, one of our students was recognized as an outstanding student and funded by the local nurse practitioner organization for $1000.00

Collaborative Efforts with Local Communities
We have contracts with multiple provides in the Charlotte region, and beyond. Our largest healthcare partner is Atrium Health, which hires our AGACP graduates as hospitalists and our FNP graduates are traditionally employed in primary healthcare settings.

Preceptor/Mentoring Activates
We are actively involved with many of the local organizations such as the local chapter of the nurse practitioner organization and the local nursing honor society, Sigma Theta Tau. We actively engage in partnerships with Atrium Health, community free clinic in various counties, local health departments throughout the state, and research in rural areas.

Self-Directed Learning Activities

Students are directed in their learning experience in the didactic portion of the program. The students then become proactive in their learning by creating self-directed learning goals for their practicum/clinical portion while aligning these with the objectives for the course. Both FNP and AGACP students engage in simulation to refine skills. Additionally, live models are employed and used in multiple simulation experiences.

Research in Primary Care

Our faculty has a wide range of research interest and strongly promotes inclusion of our students in research through assistantships. Students are also required to apply evidence-based concepts in practice. Examples of current research topics related to primary care include human trafficking, child abuse, chronic disease management in rural areas, and improving quality of life in clients with CHF.

Student Interest Groups

We offer an annual community seminar to focus on childhood sexual abuse. Students are encouraged to attend The Darkness to light seminar to assist with identification of child abuse. This seminar engages the community and allows students to network with others in the community. Students also have the opportunity to engage in decision-making within the SON by serving on committees such as the Graduate Curriculum and Graduate Admissions Committee.

Barriers

Multiple barriers exist related to student placement in primary care areas. For example, increased competition for preceptors and clinical sites, particularly in pediatrics, remains a challenge. Paying preceptors is an issue of increasing concern, particularly when competing with proprietary schools who may circumvent typical organizational processes for securing preceptors and offer several thousand dollars in compensation for services.

UNCG Primary Care
Adult/Gerontological Nurse Practitioner Report 2018

1. Admission Criteria

In 2015, the University of North Carolina at Greensboro (UNCG) School of Nursing (SoN) admitted the first class of our newly established Doctor of Nursing Practice (DNP) Adult/Gerontological Nurse Practitioner (A/GNP)—Primary Care concentration program. Simultaneously, we closed the master's A/GNP program. The DNP is a 3-year program and will graduate the inaugural class of post-baccalaureate A/GNP students in May 2018. Since 2015, the UNCG SoN admits approximately 24-26 students to the AGNP DNP post-baccalaureate program. Students meet admission requirements with a 3.2 or above GPA, three letters of reference, a personal interview, official transcripts, RN licensure, and a personal statement.

2. Curriculum Focus on Primary Care

The current curriculum for the A/GNP Primary Care post-baccalaureate DNP student includes 73 credit hours and 1035 practicum contact hours in primary care. Core courses include utilization of research and evidence-based practice, biostatistics and epidemiology, law, policy, and economics of healthcare and effective leadership for advanced practice. Support courses include pathophysiology, pharmacology, and advanced nursing roles; and specialty courses include health assessment and adult and gerontological didactic and practicum courses with a primary care focus. A DNP project is conducted over five courses.

3. IT Service

The School of Nursing is supported by an instructional design technologist who assists faculty in online pedagogical strategies. The University offers courses and support to faculty and students regarding Canvas, Gmail, and other software used for instruction. Support for IT issues is available online or by phone. A hardware analyst is available to install and maintain computers, printers, and other assistive devices for faculty. UNCG Online assists the School of Nursing in maintaining current program information on the website as well as other items of interest such as the MSN Student Handbook and the Scholarship sources and application. Program assistant staff maintain databases for the medical data base and the enrolled student database needed to support such areas as HRSA traineeship funding applications and follow up reports.

4. New Faculty/Development

Our cadre of advanced practice faculty has grown since the inception of the DNP program. We currently have a full-time director for our DNP program who is a licensed Family Nurse Practitioner, and 6.5 faculty FTEs with major teaching assignment is in the DNP program. We have three additional advance practice faculty members who support the program by teaching core courses. New faculty members are assigned to a mentor for one year when they enter the School of Nursing. They also engage in formal orientation sessions for the University and for the School of Nursing. The technology staff conduct individual orientation sessions with them to set up their computers and email, to orient them to Canvas, and to acquaint them with the classroom teaching stations.

5. Student Support/Incentives

We provide a number of forms of support to our A/GNP students. Once admitted, they are assigned to an A/GNP faculty member who serves as an academic advisor. Additionally, the Director of Graduate Study is available to answer their questions. 27 AGNP students received a total of $71,578 from SoN scholarships for AY 2017-18. 22 students received a $5,000 stipend from our newly funded HRSA ANEW grant. Some students have chosen to work as graduate assistants and have received tuition waivers in addition to the assistantship stipends.

6. Collaborative Efforts with Local Communities

A/GNP students are placed in over 250 clinical sites across North Carolina. Approximately 150 of these sites are located in counties designated as health professional shortage areas, and approximately 30 are located in rural areas. The program has used four urban School of Nursing Health Centers located in federally subsidized senior housing communities serving the Medicaid population and working poor. During the most recent data collection period. Among current students 73 are in MUAs, 71 are are in HPSAs, and 18 are in rural counties. Approximately 90% of our A/GNP graduates are practicing in underserved areas primarily in North Carolina.

7. Preceptor/Mentoring Activities

We have a large cadre of nurse practitioners and physicians who precept our students. We utilize the NC Board of Nursing guidelines for development of preceptorships. We have a clinical coordinator to work closely with our preceptors and our clinical sites. An evaluation plan and instrumentation is in place to provide feedback regarding preceptor performance, faculty performance, student performance, and evaluation for the clinical site. In July 2017, under the direction of Dr. Laurie Kennedy-Malone, we received a two-year HRSA grant ($700,000 per year) to support clinical site and preceptor development. Students are also eligible for a supplementary stipend for tuition and fees. Among our current preceptors 22 are in MUAs, 74 are in HPSAs, and 19 are in rural counties. One of the major outcomes for the HRSA grant is the development and dissemination of preceptor development activities and materials. This spring we are implementing a new and innovative program to embed an NP faculty member in the UNCG Student Health Center. This individual will be a member of the Student Health Services (SHS), providing medical services and will precept students. We believe this arrangement will spawn new learning opportunities for our A/GNP students.

8. Community Practitioner Support

We have contracts with over 250 agencies in NC that provide practicum experiences for our A/GNP students. We also utilize the NC AHEC system for placement of students with a preceptor. In a few instances, the NC AHEC has been instrumental in arranging for housing for the students if the clinical site is more than 2 hours from the student's home. Students are placed with preceptors in a variety of settings including physician practices, community clinics, health departments, long-term care, hospice, VA facilities, and student health.

9. Self-Directed Learning Activities

Our A/GNP students engage in simulation experiences in our laboratories at UNCG. They refine their practice skills through these experiences. They also have an individualized capstone experience in their final five courses that allows them to develop a project using the latest evidence to improve practice.

10. Research in Primary Care

Research in primary care is conducted through our PhD program that seeks to promote health and eliminate health disparities in women and children, older adults, and ethnic minorities. We also have an NIH funded Center of Excellence in Health Disparities and Center for the Health of Vulnerable Populations. A/GNP students may participate in some of these experiences through research assistantships and health fairs. They also apply research evidence in practice.

11. Student Groups

Students have the opportunity to be a part of the Graduate Student Association that provides some funding for professional presentations and research. They also may choose to be a member of the Multicultural Nurses Association. In summary, our A/GNP students are meeting an important need to provide primary care to those aged 13 and older in North Carolina and the nation. Our graduation rate for the A/GNP students (last MSN cohort) in December 2016 was 89%. We did have graduates in 2017, but will have our first cohort of post BSN DNP graduates in May 2018. Specialty certification rates in 2016 were 90% for AANPCB and 100% ANCC. Our employment rates were 100% with over 90% working in underserved areas.

12. Plans for Future Growth

The first cohort of post BSN DNPs will graduate in May 2018. Approximately 25 students will graduate each year moving forward. Now that we are completing the first cohort of the post BSN DNP students, we are considering increasing our enrollment of A/GNP students from 24 to 32. Applications for the program have been strong, with many students being eligible and meeting admission criteria. This year we received 51 applicants with 41 meeting all admission criteria. In the past we have wait listed applicants in the event someone declined or delayed admission, and we have provisionally accepted applicants for the following year. If we are able to admit 32 student for fall 2018, in three years we will graduate 6-8 additional students for a total of 32 annually.

University of North Carolina Wilmington School of Nursing

Laurie Badzek, LLM, JD, MS, RN, FAAN, Director

Linda Haddad, RN, PhD, FAAN, Associate Director Graduate Programs

Report: Primary Care Program Strategies to Increase Graduates Entering Primary Care

March 2018

During the last two academic years, our Graduate Nursing program (awarding an MSN, preparing Masters-prepared graduates as Primary Care Family Nurse Practitioners) has utilized multiple strategies to increase the number of primary care providers. Our efforts have focused on the following areas:

Admission Criteria

We have traditionally accepted approximately 30% of our applicant pool into the MSN degree program. However, we have increased our enrollment by 20% per year during the last two years. Our plan is to start the FNP, BS-DNP program in August 2020 and increase enrollment by an additional 30%, with an increased number of full time applicants in this cohort. This will accelerate graduation and entry to practice. This proposed new program will generate new primary care s at the highest level of nursing practice in -3 years. Table 1, reflect number of enrollment and graduation in the last three years

Year Enrolled	Number Enrolled	Number Graduated
2014	33	30
2015	41	35
2016	34	19
2017	58	39

Curriculum Focus on Primary Care

The MSN program has focused on primary care since its inception 17 years ago. We continue to revise and adjust curriculum to focus on changing needs within this setting, most recently on genetics/genomics, ethics, health communication and inter-professional education and practice. Our new Doctor of Nursing Practice (DNP) program is allowing doctoral nursing students to conduct practice change projects focused on vulnerable rural and underserved populations' health needs.

IT Services

Two graduate-prepared dedicated eLearning professionals are relocated in our school of nursing building, to better directly serve students, faculty and staff. Students received training in Blackboard, library database resources and Typhon clinical practice software during orientation when they begin this program. One reference librarian was assigned to work with faculty and students beginning in 2015. The eLearning Center offers 15 on campus learning opportunities annually so that faculty can expand and deepen skill sets in using technology in the curriculum and support learner needs.

New Faculty/Development

During academic year 2016-2017, we interviewed hired for 2018 to four new nurse practitioner faculty members, who will teach across all levels in the school of nursing. We also hired one additional faculty starting the 2018-2019 academic year. In preparation for the BSN-DNP program we will continue to recruit appropriate, experienced NP and DNP faculty in family, psych and leadership. Faculty members are encouraged to attend at least one national clinical conference annually in there population/setting practice area and the school of nursing supports this attendance. Faculty also received the opportunity to attend onsite clinical simulation educational events in the Clinical Simulation Center. All faculty maintain current national certification. Current NP faculty FTE = n=13.

Student Support/Incentives

Our Clinical Simulation Center is now utilized for graduate nursing education. Students have participated in simulated educational opportunities to conduct comprehensive geriatric assessments and to work in inter-professional teams to deliver difficult health news. This work has been published by faculty groups in peer-reviewed publications. An applied learning grant has supported reflective journaling experiences for all graduate nursing students.

Collaborative Efforts with Local Communities

Through the Center for Health Communities and the Associate Dean for Innovation's office within the College of Health and Human Services, opportunities exist for faculty to engage as fellows to collaborate with community agencies to complete quality assessment and performance improvement projects. Examples of these projects include county-level health assessment survey, neighborhood community participatory research google map survey, clinical expert panel and others. Several grants have been funded allowing faculty and students to engage with vulnerable primary care populations (persons with dementia, patients with advanced heart failure, adolescents with risky behaviors, women's health and HIV care, older adults with chronic illness).

Preceptor/Mentoring Activities

Student mentoring: Faculty lead graduate nursing students in one-to-one Directed Independent Study (DIS) projects each semester, to collaborate on a match between the students' clinical care interests in primary care practice and the expertise of the faculty member. Students are mentored in various

components of care delivery evaluation and reviews of literature to support primary care research. For academic year 2016-2017, a total of 24 DIS projects have been undertaken.

Our clinical preceptor partners include MD, DO, NP or PA practitioners who precept our graduate nursing students for a total of 600 clinical hours. Faculty visit each clinical student/site/preceptor to assess the students' clinical progress and learner needs. Preceptors are encouraged to share their insights about advance practice nursing curriculum, assignments and practice needs.

Community Practitioner Support

A new Clinical Placement Coordinator is using her professional networks to continually advance our efforts to form new collaborative partnerships to include clinical preceptors for our NP students. During Spring term 2017, 50% of our students were placed in new clinical sites with new preceptors, and this effort is possible due to faculty efforts to grow and maintain partnerships with colleagues practicing in primary care throughout NC.

Self-Directed Learning Activities

Students participate in clinical simulation activities which promote self-directed individual and team learning. Students have engaged in learning how to present bad health news to primary care patients, conduct comprehensive geriatric assessments in teams, worked in collaborative care teams to investigate child abuse cases and have participated in intensive clinical laboratory stations to gain proficiency in primary care skills (suturing, joint injections, health assessments, radiological diagnostic examinations, pre-surgical clearance).

Research in Primary Care

Several grant mechanisms have allowed nursing faculty to increase productivity in conducting clinical research for primary care patients. These have included ETEAL (Explorations to transform education in applied learning) grants, Corbett grants (funded through the Corbett Family Foundation) and Cultural Arts grants. Examples of faculty research within the last two academic years includes: Use of Aromatic Oils in Ill Elders; How to Have Difficult Conversations in Primary Care Practice; Adolescent Risky Behaviors; Pediatric School-Based Health Clinic Care Delivery; Dementia and Driving Safety). External grant applications are now supported within the College of Health and Human Services in the Office of the Associate Dean for Innovation and Research, a new position created and filled two years ago.

Student Interest Groups

Nursing students on campus are active in a variety of college-based, university-wide and school of nursing based organizations: Sigma Theta Tau Honor Society, Men in Nursing, and Diversity in Nursing.

The Western Carolina University (WCU) School of Nursing currently offers two Family Nurse Practitioner (FNP) graduate programs designed to prepare students for primary care practice.

- Master of Science-Nursing – Family Nurse Practitioner Concentration
- Family Nurse Practitioner Post-Master's Certificate Program

The FNP curriculum is designed to support attainment of competencies in family health promotion and clinical management of common health conditions across the lifespan. Courses focus on content relevant to all aspects of primary care, such as screenings, preventive health visits, acute problems, and chronic disease management.

Students receive throughout the FNP program(s) training in advanced clinical skills and diagnostic reasoning needed to practice in primary care settings. Clinical training rotations are completed in primary care sites throughout the western part of the state during the program. FNP students complete individual student graduate research projects focused on rural practice settings, access to care and a variety of problems commonly addressed in primary care practice.

The WCU FNP program(s) have been successful in the recruitment of a strong pool of regional applicants. During the admission process, each applicant's interest in providing healthcare in primary care settings is evaluated along with their academic qualifications. The number of applicants is significantly higher than the number of FNP students the program can serve due to several restrictive factors including:

1. A limited number of primary care clinical sites and preceptors available
2. Substantial competition for primary care clinical training sites from medical schools and residency programs in the areas
3. A shortage of nursing faculty for FNP programs
4. Lack of educational and simulation lab space for teaching and practical exams

WCU has been awarded Health Resources and Services Administration grants during the past two year reporting period. The Advanced Education Nursing Traineeship grant supported scholarships for FNP students studying to become primary care nurse practitioners. This year WCU received the Advanced Nursing Education Workforce grant, which combines scholarship support and development of a community partnership with a healthcare organization. With support from this grant, WCU initiated the Partnership for Longitudinal Academic/Clinical Education Strategy (PLACES) with Mission Health. PLACES creates an innovative academic-practice partnership to prepare primary care nurse practitioners, with the ultimate goal of increasing the number of primary care providers in rural and underserved areas. Preceptor development is one component of this project, as well as an annual conference focused specifically on primary care practice issues.

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The WCU FNP program is fortunate to have a part-time clinical placement coordinator to assist in the arrangement of primary care clinical rotation sites for FNP students. Due to the significant and increasing competition for primary care training sites, this position is essential to the success of FNP student placement for clinical courses.

Development of ongoing clinical collaboration contracts is one focus currently underway to improve the process of supporting student training in primary care.

In the past two years, the WCU FNP program has transitioned from a 3-year part time program to 2 year fulltime program. This allows students to become primary care providers in a more condensed amount of time. The graduation report below reflects the growth in numbers of students who attained a MS-N or Post-Master's Certificate as an FNP. The program completion rate has been 93% and has improved to a 100% completion rate in the past two FNP student cohorts.

Number of FNP Graduates	
May 2015	13
May 2016	16
August 2016	25
August 2017	25

In the most recent employment survey of WCU FNP alumni, the majority indicate that they are currently practicing in primary care and most work in a Healthcare Provider Shortage Area or a Medically Underserved Community clinic as noted above. WCU is committed to preparing nurse practitioners as primary care providers and will continue ongoing efforts to contribute to this particular workforce need in North Carolina.

Employment Data	
Employment data Available	*76*
Working in Primary Care	*67%*
Working in Specialty Practice	*33%*
Working in HPSA or MUC Clinic	*85%*

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WINSTON-SALEM STATE UNIVERSITY
School of Health Sciences

Division of Nursing

Cecil Holland, RN, MEd, MSN, FNP, EdD, PhD
Associate Dean & Chief Operating Officer of Division of Nursing

Proposed intent to increase enrollment FNP Concentration

This proposed intent to increase enrollment in the FNP concentration is in response to the UNC System Office, formerly General Administration, request to increase enrollment in graduate programs.

Nursing is recognized as the most trusted healthcare professional. WSSU is poised to contribute to this dynamic workforce through its graduate nursing program. To thrive as care providers in the 21st century, nurses must not only have a solid educational background and advanced skill set but also be aware of the trends and changes taking place in health care. WSSU FNP Concentration prepares its APRNs to be leaders in the healthcare enterprise.

Family Nurse Practitioners represent the largest segment of advanced practice nurses (55.1%, 2014-2015). NPs have enjoyed positive momentum in recent years. With the number of nurse practitioners on the rise and the increased needs for advanced practice nurses with a specialty certification in family health, WSSU is positioned to make significant contributions to enrollment growth and the nursing workforce.

The Doctor of Nursing Practice degree has exceeded everyone's expectation. In 2001, the IOM declared that in order to ensure patient welfare and meet the demands of modern medicine, healthcare providers' education must be reformed. In response, AACN developed the DNP degree and identified it as the terminal degree for advanced practice nurses.

The UNC System Office recognizes a critical need to increase student enrollment in the FNP concentration. An increase will not only meet enrollment projections, increase WSSU state allocations/funding and student credit hours, but also add to the critical nursing workforce shortage. Increasing the number of FNP students however comes with concerns and challenges. Below is a proposed projections of FNP students over the next 5 years. This represent a 20% increase in enrollment over the projected timeline (2018-2023).

Proposed projections over next 5 years

Student Type (FNP ONLY)	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
New	33	43	45	45	50	50
Continuing	47	40	43	45	45	50
Total	80	83	88	90	95	100

Percentage increase from 2018-2020 = 6%; percentage increase from 2020-2021 = 2%; percentage increase from 2021-2022 = 6%; percentage increase from 2012-2022 = 5.2%

Immediate needs to increase enrollment

- 1 full time faculty; 1 adjunct faculty the teach women's health, 1 pharmacology and 1 pathophysiology, clinical adjunct faculty
- An additional APRN skills lab with 10 exam tables w/necessary supplies and equipment
- Additional clinical space and contracts
- Scholarships and graduate assistantships Aggressive recruitment and marketing campaign
- Additional financial resources to support student travel to professional conferences for presentations

Justification of Needs

Increase in Faculty Support:

Current faculty in the graduate program teach across graduate programs i.e., MSN, DNP, and Bridge to PhD. There are 5 faculty who teach primarily in the FNP concentration, however, they also teaching the doctoral and/or Bridge to PhD programs. Increasing enrollment based on the projections forecasted above will require at least one full time faculty specifically for the FNP program and 1 adjunct faculty to teach women's health. There is no current graduate faculty with expertise or certification in women's health.

Laboratory space:

Current lab space not sufficient for current enrollment (9 primary care exam settings). Any projected growth in enrollment will require deliberate consideration for additional lab space for student to enhance advanced practice skills in a simulated primary care setting. An additional 4-9 primary care exam setting will support the projected enrollment growth allowing space for 2 practice partners per exam space. Each primary care exam space must be equipped with appropriate supplies and/or equipment necessary for complete physical assessment and training purposes.

Clinical space/contracts:

Without adequate and appropriate clinical space, FNP students cannot learn the required skills needed to practice at an advanced level. Many primary care clinics are charging schools and/or students for requisite clinical rotations. This phenomenon is pervasive in the primary care provider arena affecting FNP education and training by placing limitations of available clinical space. As this phenomenon continuous, serious consideration regarding its impact on enrollment growth must ensue. Developing contracts and MOU that maximize clinical opportunities while minimizing cost and/or eliminating course are discussions that must convene.

Many of our FNP students come from the southwestern part of the state. Many are employed in and/or around the Mecklenburg County. Serious consideration regarding clinical space/rotation in this region of the state is paramount if we intend to grow the FNP concentration. Consider innovative academic-practice partnerships i.e., NP may have dual employment such as WSSU school may consider paying a percentage of their salary for clinical rotations

Scholarships:

Many graduate programs offer scholarships. Other than the HRSA SDS scholarship that s disbursed based of need, the DON does not offer another form of scholarship or financial support. Many FNP students do not qualify for financial aid because many maintain full time or part-time employment thereby reducing their ability for grants. Having fiscal resources to offer scholarships would offer the DON a more competitive edge. If scholarships were available, we would attract more students. Currently our competition draws them because of their ability to offer full and or partial scholarships. Being able to offer scholarship could potentially decrease students moving from full time status to part time status because of the need to work.

Recruitment and Marketing:

A need for a more aggressive and intentional recruitment and marketing campaign is critical. Fiscal resources are needed for high scaled recruitment and marketing efforts. In the day technological advances, the use of digital platforms, Facebook, Twitter and other social media outlets are needed to market the FNP concentration. There is a needed for the DON, Enrollment Management and Marketing to work collaboratively the design and/or redesign strategic recruitment and marketing goals. Recruitment and marketing must be sustainable and ongoing. Intentional and deliberate recruitment and marketing must take place in venues such as professional conferences, health care facilities, schools and colleges/universities at a local, state, national, and international level. Printed materials must be design in such a way that attract potential students. The DON will utilize the expertise of its Endowed Chair for Recruitment to develop strategies and goals for increasing our presences in the communities we serve and beyond.

Other resources:

Additional resources are needed in Enrollment Management Services dedicated to graduate admissions, and application processes, and other processes to assist with increased enrollment projections. Active investigations regarding financial support for graduate students is needed, i.e., grants, loans, donors, graduate assistantships, etc.

***NOTE**: Increasing enrollment in the FNP concentration has the strong potential of increasing enrollment in the DNP Program, thereby increasing nurses with terminal degrees and adding a pipeline of nurse educators, administrators, researches and clinical practitioners. This also has a direct impact on state funding and the generation of student credit hours in the graduate and professional nursing programs.*

Physician Assistant Programs

In response to the charge to increase Campbell PA's graduates who practice in primary care, please consider the summary as follows. The overall mindset of Campbell PA is to instill the desire to serve in primary care, rural health settings. As put forth in our mission statement, our program goals include promotion of a patient-centered approach to health and disease by emphasizing primary care. Although there is no specific primary care track for our students, like other PA students, Campbell PAs are educated as generalists who have the ability to work across many disciplines, primary care foremost.

In the didactic year at Campbell PA students have many and varied opportunities to learn about and experience primary care medicine. The curriculum is heavily skills based and a vast majority of the simulations and clinical case studies are based upon primary care patients, most often in rural settings. In addition, as part of our early clinical experience exercises in the didactic year, students are required to spend designated times each block at a variety of primary care sites where they practice their patient care skills. These sites include numerous local and community based primary care practices, most of which are in rural, underserved areas. Students are also encouraged to volunteer weekly at the Campbell Community Care Clinic, a free clinic for underserved patients which is supported by the university and driven by interprofessional teams of health care students.

During their clinical year of education, Campbell PA students spend more than seventy percent of their time in primary care settings. These rotations include, but are not limited to, Internal
Medicine, Family Medicine, Pediatrics, and Obstetrics and Gynecology. Students are also required to have a specific primary care rotation (ambulatory medicine) w h i c h varies by site. Furthermore, students have the option of choosing additional primary care rotations for their two electives during the clinical year. Suffice it to say, there are many, many opportunities to experience primary care medicine in the clinical year.

Primary care and rural health are always part of the emphases at our recruiting and admissions activities. Students are directly informed that Campbell PA aspires to educate and place primary care providers where they are most needed. At numerous junctures in their education, students are given information regarding the National Health Service Corps as well as county Health Departments as a pathway to enter primary care while they also receive tuition assistance. A number of scholarships are granted each year to matriculating students who plan to enter primary care.

One of the unique opportunities for Campbell PA students is the MSPH/MPAP dual degree option. As the first of its kind in North Carolina, and only one of six in the nation, this innovative program incorporates the best of public health awareness with practitioners equipped to serve community and patient needs. A significant portion of the didactic and practical education of these well-trained students is primary care focused. Students who have graduated with this dual degree naturally gravitate to more community based, primary care settings. They have a wealth of expertise to share with their patients and colleagues.

According to recent graduate surveys (Class of 2016 and 2017) 28% are in primary care, 14% in emergency medicine, 8 % in Urgent Care, 14% in surgery, and 28% are in a specialty. The surveys reveal that 26% of respondents practice in a rural setting, 30% in a suburban setting, and 40% in an urban setting. Hopefully, Campbell PA will continue to successfully promote and provide the best primary care clinicians for the greatest health care needs across all of North Carolina as well as the entire United States.

DUKE PHYSICIAN ASSISTANT PROGRAM

The mission of the Duke PA Program is to educate caring, competent primary care physician assistants who practice evidence-based medicine, are leaders in the profession, dedicated to their communities, culturally sensitive, and devoted to positive transformation of the health care system. Our preclinical "didactic" year of education is focused on the essentials for primary care practice and our faculty team recently reaffirmed that focus in our Spring 2018 Curriculum Retreat. Learning objectives, content and desired outcomes and competencies are directed to primary care practice. During the clinical year of our educational program, all students complete at least eight weeks of experience in a primary care practice, as well as at least four weeks in pediatrics. Our Medicine rotation has incorporated outpatient primary care practice as one of its features.

We currently offer longitudinal experiences in rural, underserved areas of North Carolina. These longitudinal experiences are based in primary care settings and also include women's health, pediatrics, behavioral medicine and a primary care elective experience. The longitudinal experience concept was originally developed by us in 2012 as part of a HRSA grant designed to increase the number of PA providers in primary care. This five-year grant project, which provided some scholarship support to PA students, had significant outcomes. The "Underserved Community Scholars" selected for these longitudinal rotations, followed over time, are more than twice as likely as their classmates to be employed in primary care settings, and nearly three times as likely to be employed in medically underserved areas (MUAs).

Fifty-five percent of Underserved Community Scholars were from underrepresented minority groups or disadvantaged backgrounds. The Duke PA Program is committed to diversity and each incoming class represents the diversity that is needed among primary care providers to meet the needs of North Carolina's communities.

Our longitudinal and other primary care experiences are dependent on strong relationships and engagement with the communities in which these practices are based. Our students live in these communities for their clinical experience, often in AHEC housing. We are indebted to AHEC for their assistance in making our primary care experiences possible in North Carolina's rural communities.

PA students with strong "match to mission" may apply for a Hamilton Carter Scholarship through the Duke PA Program. These scholarships ranging from $10,000 to $15,000 per academic year, were initially awarded last year and represent the program's use of recovered loan funds to meet the primary care and leadership missions of the program. Twenty-five scholarships are available each year; our total enrollment is 180 students (90 in each year of the program).

To summarize, the Duke PA Program is focused on primary care through its mission statement, its educational process, the scholarships it provides, and the research it conducts. We value this focus and see it continuing long into the future.

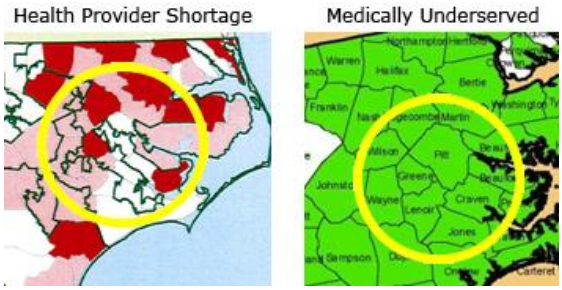
Mission Statement

The mission of the Department of Physician Assistant Studies is to provide educational experiences which prepare physician assistant graduates to enhance access to primary medical care, with a hope to increase care for the citizens of rural and medically-underserved Eastern North Carolina and beyond. We seek to achieve this mission in an educational community where faculty, staff, clinical instructors, students, and other health care providers work together in an atmosphere of mutual respect, cooperation, compassion, and commitment.

Program Goals

These goals support the mission of the Department of Physician Assistant Studies:

Goal: To maintain a primary care-oriented educational program that includes exposures to rural and medically-underserved populations.



Outcome: The curriculum is designed with a primary care focus. Oversight of curriculum development is provided by the program faculty with feedback from the medical director. The curriculum focuses on primary care and embraces the Competencies for the PA Profession as designated by the National Commission on Certification of Physician Assistants, utilizing their "blueprint" as a guideline in developing curriculum content. All students are exposed to rural and medically-underserved populations by doing one or more clinical rotations in medically-underserved areas and/or areas with a shortage of health professionals. The yellow circle represents the area where most of our core rotations are located.

Goal: Achieve a first-time pass rate on the Physician Assistant National Certifying Examination (PANCE) that meets or exceeds the national average.

Outcome: Success of this goal is evidenced by a 100% first-time pass rate on the PANCE in: 2013, 2014, 2015, 2016 and 2017. Over the last five years, the program's first-time PANCE pass rate average is 100%, which is 4 % higher than the national average.

Physician Assistant National Certifying Examination
Five Year First Time Taker Summary Report

Program Name: East Carolina University College of Allied Health Sciences

Program Number: XXXX

Report Date: 03-06-2018

Definitions of the report headings are provided at the end of the report.
All information is current as of the date the report was generated.

Class	Class Graduation Year	Number of First Time Takers	Program First Time Taker Pass Rate	National First Time Taker Pass Rate for the Class Graduation Year
December 2013	2013	32	100%	94%
Class 2014	2014	33	100%	95%
Class 2015	2015	30	100%	96%
Class 2016	2016	34	100%	96%
Class 2017	2017	34	100%	97%

Five Year First Time Taker Average Pass Rate for Program: 100%

Five Year National First Time Taker Average: 96%

Goal: Recruit, select, and educate a highly qualified student population mostly from North Carolina, with representation from rural communities without regard to ethnicity, culture, gender, or religion.

Outcome:

Graduating Year	Cumulative GPA	Science GPA	Prerequisite GPA	GRE Score	GRE Analytical Writing	% from a rural community	% North Carolina residents
2019	3.70	3.66	3.76	308	4.4	27	91
2018	3.72	3.67	3.85	306	4.4	26	94
2017	3.74	3.713	3.8	308	4.43	33	81
2016	3.78	3.76	3.91	312	4.24	38	97
2015	3.53	3.51	3.69	309	4.31	40	93
2014	3.78	3.73	3.89	312	4.3	48	93
2013	3.53	3.51	3.75	309	4.31	34	94

Admissions Criteria

East Carolina University's Department of Physician Assistant Studies master's degree program takes pride in developing leaders who inspire, empower and influence positive change. Admission to the ECU Physician Assistant Program is very competitive with approximately 1,000 applicants seeking admission for the 36 spaces in each new class. All applicants are made

aware of our primary care mission and members of the Admissions Committee look specifically for applicants that are passionate about primary care. In order to further our primary care mission the majority of students we accept are from North Carolina. We also accept up to 6 students each year for the contagious states of: South Carolina, Tennessee, Virginia or Georgia. Though there is no specific application requirement for primary care, the charge of the admissions committee is to admit students who desire to practice exceptional, caring, evidenced based primary care medicine.

Student Support / Incentives

Our program actively encourages students to apply for scholarships provided by the State of North Carolina such as the Forgivable Education Loans (FELS) and the National Health Service Core program sponsored by the Federal Government. Both of these programs pay for PA School contingent upon alumni taking a primary care job in a medically underserved area.

In the first semester of PA education at ECU, students are mandated to complete service learning with a focus on primary care. The list of acceptable sites has a mix of rural and underserved population including, but not limited to: local/regional afterschool programs, migrant farm workers, free clinics and veteran mobile units.

Curriculum Development and Collaboration to Improve Primary Care

As outlined below, our curriculum is designed with a primary care focus and in the first 4 semesters of the program our students take 59 semester credit hours of course work.

Fall I

Number	Course Title	Credit Hours
PADP 6030	Clinical Gross Anatomy	5
PADP 6040	Human Physiology	5
PADP 6050	Introduction to Clinical Medicine	3
PADP 6200	History and Physical Exam I	2
PADP 6000	Role of Physician Assistant and the History, Philosophy, and Ethics of Medical Practice	1
	Total Credit Hours	16

Spring

Number	Course Title	Credit Hours
PADP 6500	Pharmacology and Pharmacotherapeutics	4
PADP 6210	History and Physical Examination II	3
PADP 6150	Clinical Medicine I	5
PADP 6010	Diagnostic Methods I	3
	Total Credit Hours	15

Summer

Number	Course Title	Credit Hours
PADP 6020	Diagnostic Methods II	3
PADP 6250	Clinical Medicine II	4
PADP 6850	Health Promotion/Disease Prevention	2
PADP 6220	History and the Physical Examination III	3
PADP 6640	Evidence Based Medicine	2
	Total Credit Hours	14

Fall II

Number	Course Title	Credit Hours
PADP 6690	Introduction to Clinical Practice	6
PADP 6800	Behavioral Medicine and the Psychosocial Issues in Health Care	2
PADP 6650	Surgery and Emergency Medicine Skills	4
PADP 6810	Medical Ethics and Jurisprudence	2
	Total Credit Hours	14

The ECU Department of Physician Assistant Studies is involved in multiple interdisciplinary collaborative activities that emphasize primary care.
Since 2013 all ECU PA students complete an interprofessional immersion in geriatric fall risk. In 2017-2018 new opportunities for interprofessional collaboration include: multidisplinary case studies involving geriatric patients with optional opportunities available related to interpretation of chronic care related to interprofessional patient-centered care.
ECU PA also participates in two grants related to primary care training and interprofessional education through the Human Resources and Services Administration (HRSA). These include the newly extended Geriatric Workforce Enhancement Program (GWEP) that increases student exposures to rural and underserved areas while creating opportunities to learn in an interprofessional team. ECU PA also participates in an additional HRSA grant that has generated Project SHAPE, providing interprofessional learning experiences related to quality improvement in primary care sites in Eastern North Carolina. A portion of the funds awarded to the program from these grants is also used to allow students to participate in the Paul Ambrose Scholars Program which consists of a one-year program where scholars from the ECU PA program complete a primary care community-based project that addresses health promotion or disease prevention, participate in online engagement and learning, then attend a student leadership symposium.
To further our primary care mission each ECU pa student completes four 1 month clinical rotations directly related to providing primary care. Two rotations are required in inpatient Family Medicine, one rotation in Internal Medicine outpatient and one rotation in Internal Medicine inpatient. This gives the student at least 40% of their clinical experience in primary care settings.

Preceptor Recruitment, Education and Training

In constant preparation for the clinical year, our department actively recruits preceptors in primary care facilities year-round. Each site is visited annually by a clinical faculty member to monitor student performance and improve learning outcomes of our students. In the past year, this has included heavy recruitment from FQRHC (Federally Qualified Rural Healthcare Center) agencies and rural health centers. We are actively providing educational resources to our preceptors, as well as the free trainings regarding care of the elderly as noted from the GWEP grant collaboration (above).

Alumni outcomes related to Primary Care employment

Based on an Alumni survey done six months after graduation approximately 50% of our graduates from the class of 2016 had primary care jobs. According to research conducted in the Journal Medical Care Research and Review in an article entitled "*Scarcity of Primary Care Positions May Divert Physician Assistants into Specialty Practice*", in 2014, 82 percent of PA job postings were for positions in specialties, while only 18 percent were for primary care. Of approximately 100,000 PA positions occupied in 2014, 73 percent were in specialty care while 27 percent were in primary care. These statistics demonstrate that our program places twice as many graduates in primary care than the national average despite the fact that primary care jobs for physician assistants are drastically diminishing.

Elon University – PA Program

Our charter class enrolled in January 2013 and graduated in March 2015. As of February 24, 2018, the Program will have graduated four classes (N= 37, N-37, N=38, N=38 for a total of 150 graduates). We also have two classes currently enrolled (N=38, N=38 for a total of 76 matriculated students in the first and second years of the program).

Consistent with program values, our admissions interviews allows students to share experiences/ties they have to primary care/underserved areas (consistent with the program values), and we also have co-medical directors, both of whom have practice backgrounds in general internal medicine. Our applicant pool and matriculates have become increasingly diverse, which includes those from rural, underserved and international backgrounds.

We were initially providing a primary care scholarship for the first two years, and an underserved scholarship the two years thereafter, but due to increasing preceptor stipends, we will have to discontinue this scholarship until we are able to explore external funding to support it. However, our commitment to primary care remains a priority.

We have developed a videotape presentation that is displayed on our website with a message about the need for primary care practice and featuring a primary care scholarship recipient, and our medical director. We also have a videotape on the website that features a pediatric office where our students rotate. Many of our clinician lecturers are primary care practitioners. Our required rotations (like all PA programs) include rotations in primary care, pediatrics, and women's health among others. Lastly, many of our students volunteer at the Open Door Clinic during their first year (underserved population) and the student society has selected this organization as their primary philanthropic organization. We also encourage students and graduates to consider NHSC placement after graduation. Notably, we had 4 people from the Class of 2016 and one from the Class of 2018 selected for NHSC scholarships. Three have accepted jobs in primary care in NC or SC, the fourth is in inner city Minneapolis/St Paul in an undeserved community practice. The most recent graduate is seeking a rural placement in NC.

We also track program outcomes/employment for each class. Placement for the first three classes is noted below with highlights on those accepting primary care positions. Over the course of the past three graduating classes (Information for the Class of 2018 not yet available), 29% of graduates have accepted initial positions in a primary care setting.

The Elon PA Program Successes:

The average Elon PA PANCE pass rate for first-time takers is 97%. (100% all time pass rate)

Graduate employment for the class of 2017 as of February, 2018:

38 graduates – 100% employment as a physician assistant

20 (53%) remained in NC

Specialty Areas of Practice:

- Family Medicine (9)
- Orthopedics (9)
- Surgery *including trauma, general, neuro, vascular* (5)
- Emergency Medicine (5)
- Inpatient/Internal Medicine (3)
- Cardiology (2)
- GI (1)
- Behavioral Med (1)
- Pediatrics (1)
- Critical care/ICU Fellowship (1)

- Dermatology (1)

Graduate employment for the class of 2016 as of September, 2016:
Class of 2016 – 100% Employment as a Physician Assistant
37 graduates — 22 (60%) remain in NC
Specialty Areas of Practice:

- Family Medicine/Primary care/Urgent Care (11)
- Surgery (7)
- Inpatient/ICU/Internal Medicine (5) (APPROX 3 are PRIMARY CARE)
- Pediatrics (4)
- Orthopedics (3)
- Emergency Medicine (2)
- Cardiology (2)
- GI (2)
- Endocrinology (1)

Graduate employment for the inaugural class of 2015 indicates 100% employment as of September, 2015:
Class of 2015 – 100% Employment as a Physician Assistant
37 graduates — 20 (54%) remain in NC

Specialty Areas of Practice:

- Emergency Medicine (6)
- Internal medicine/hospitalist/critical care (5) (APPROX 3 are PRIMARY CARE)
- Family Medicine (7)
- Surgery *including orthopedics, general, vascular, cardiothoracic* (10)
- Trauma Surgery/ICU (2)
- Hematology/Oncology (2)
- Psychiatry/neuropsychiatry (2)
- Cardiology (2)
- Pediatrics (1)

Gardner-Webb University – Physician Assistant Studies Program

The inaugural class of 24 students matriculated in January 2014 and 22 graduated in May 2016. Subsequently, we have graduated a cohort in May 2017 of 29 and anticipate our next cohort of 28 to graduate in May 2018. We currently have two additional cohorts of 32 (Class of 2019) and 36 (Class of 2020). We have matriculated a total of 156 students.

Our admissions process allows students to express their primary care interests via the application process and interviews. Our faculty members have clinical experience that is largely focused in primary care/underserved areas. One faculty is a National Health Service Corps graduate. We have two primary care physicians on faculty with collective experience in family practice and hospice care. Our applicant pool and matriculates continue to become more diverse in their backgrounds. Our institution is in a medically underserved area, and many of our student population is a mix of those from both rural and underserved backgrounds.

We recently received a grant for academic scholarship that we anticipate using as a primary care scholarship. While most of our faculty deliver the classroom/lab education for our PA students, we often utilize community PAs and physicians to supplement material, many of whom are primary care practitioners.

Our required rotations include all required core rotations in primary care, such as family practice, internal medicine, pediatrics, and women's health. Additionally, we require our students to complete an Underserved Populations Rotation during their clinical year. Our students serve monthly at the local soup kitchen affiliated with the Cleveland County Baptist Association where they do health screenings for our local homeless population.

With our two classes that have graduated, our outcomes/employments have been tracked for each class. The statistics for our upcoming graduating 2018 Cohort are unavailable at this time.

Primary Care Statistics for GWU:

The Gardner-Webb University Physician Assistant Studies program PANCE pass rate for first-time takers in 2017 is 97%, commiserate with the national average.

Graduate employment for the 2016 Cohort:

22 graduates
100% work as a Physician Assistant
15 (68%) practice in North Carolina
HRSA-defined Primary Care Areas of Practice:

1. Family Medicine (7)
2. Hospitalists/Internal Medicine (1)
3. Pediatrics (1)
4. Women's Health (0)

Of these nine (9) graduates working in primary care, seven (7) work in North Carolina.

Graduate employment for the 2017 Cohort:
29 graduates
93% work as a Physician Assistant (7% unknown)
17 (58%) practice in North Carolina
HRSA-defined Primary Care Areas of Practice:

- Family Medicine (4)
- Hospitalists/Internal Medicine (3)
- Pediatrics (0)
- Women's Health (0)

HIGH POINT UNIVERSITY
Physician Assistant Studies

The mission of the High Point University (HPU) Physician Assistant (PA) program is to "deliver a student-centered, experiential curriculum grounded in high academic and ethical standards. The program strives to develop compassionate PAs who are self-directed lifelong learners prepared to provide evidence-based, patient-centered care as members of an interprofessional healthcare team."

The HPU PA program graduated the first cohort of 19 students in August 2017 and is welcoming the fourth incoming class consisting of 35 students. Program curriculum both in clinical and didactic phases are designed towards preparing a generalist PA with skills well suited for primary care practice, including Family Medicine, Pediatrics, Internal Medicine, and Obstetrics/Gynecology.

During the Didactic Phase of the program students are heavily involved in primary care focused volunteer activities. In 2017 community engagement activities had 100 % participation from all student cohorts as well as program faculty. Area of service include, but are not limited to the following organizations:

1. American Red Cross
2. An Impact Beyond Life
3. Backpack Beginnings
4. Boys & Girls Club of High Point
5. Community Clinic of High Point
6. Dusty Joy Foundation
7. Forsyth County Emergency Medical Services
8. Foundation for a Healthy High Point
9. Gift of Life
10. Greensboro Urban Ministries
11. High Point Christian Academy
12. High Point City Farmer's Market
13. High Point Cycling Classic
14. High Point Police Department
15. High Point Regional UNC Health Care System Board of Trustees
16. High Point Regional UNC Health Care System HOPE Van
17. High Point University Community Christmas
18. Martin Luther King, Jr Day of Service
19. Multiple 5k Race Events
20. Old Town Baptist Church Free Medical Clinic
21. Pennybyrn at Maryfield
22. Piedmont Association of Physician Assistants
23. Salvation Army
24. University of North Carolina at Greensboro, Science Everywhere
25. Ward Street Mission
26. Westchester Country Day School

27. World Relief – High Point

The HPU PA program is affiliated with various clinics that primarily serve patients in underserved populations. These locations expose students to a wide variety of patient care experiences offered during the clinical phase of the program. To ensure that students maintain a Primary Care knowledge base throughout the clinical year, Primary Care Examinations are administered at the conclusion of each Clinical Seminar course (series of 3 courses offered throughout the clinical year). This exam is separate from the End Of Rotation examinations.

The High Point University PA Program Learning Outcomes clearly support preparing students for primary Care Practice and include:

1. Perform focused histories and physicals on patients across the life span and in a variety of health care delivery settings.
2. Formulate a differential diagnosis based upon the patient history and physical exam and recommend the proper diagnostic studies.
3. Diagnose common medical and behavioral problems likely to be seen in a primary care setting
4. Diagnose potentially life- or function-threatening medical and behavioral problems likely to be seen in a primary care setting.
5. Develop, implement and monitor management plans for emergent, acute, chronic or ongoing conditions including pharmacological and non-pharmacological approaches, surgery, counseling, therapeutic procedures and/or rehabilitative therapies.
6. Accurately and concisely communicate the findings of a given patient encounter in written and oral forms to all members of the health care team.
7. Demonstrate sensitivity and empathy regarding the emotional, cultural and socioeconomic aspects of the patient, the patient's condition and the patient's family.
8. Communicate in a patient-centered and culturally responsive manner to accurately obtain, interpret and utilize subjective information and construct a patient-centered management plan.
9. Provide advocacy and support to assist patients in obtaining quality care and in dealing with the complexities of health care delivery systems.
10. In all encounters, demonstrate professional behavior to the highest ethical and legal standards by recognizing professional limitations, then consulting with other health care providers and/or directing patients to appropriate community resources, as needed
11. Critically evaluate the medical literature in order to use current practice guidelines and apply the principles of evidence-based medicine to patient care.
12. Educate patients in health promotion and disease prevention and demonstrate a working knowledge of all tiers of preventive medicine in patient interactions.
13. Perform clinical procedures and interpret test results likely to be encountered in a primary care setting.

The High Point University PA Program identifies the following "Program Goals" with Outcome Measures and benchmarks:

Program Goal 1: Recruit highly qualified applicants

Outcome Measure A: Matriculated student CASPA information: Cumulative Undergraduate GPA, Cumulative Undergraduate Science GPA, and GRE scores.
Benchmark: Matriculated student Cumulative Undergraduate GPA, Cumulative Undergraduate Science GPA, and GRE scores will meet or exceed national averages.

Outcome Measure B: Matriculated student prior healthcare experience.
Benchmark: Matriculated student mean healthcare experience will be at least 1,000 hours and greater than average level of patient care/responsibility. "Average" level of patient care/responsibility rating is 2 on a 1 – 4 point scale.

Outcome Measure C: Matriculated student admission interview performance.
Benchmark: Matriculated students will attain average admission interview scores of at least 85% of the possible points.

Program Goal 2: Deliver a curriculum that ensures all graduates possess the requisite knowledge and skills for entry to PA practice

Outcome Measure A: Student, faculty and preceptor ratings of the students' preparedness and ability to perform the Program Learning Outcomes (PLO). The following surveys are used to measure student preparedness and ability to perform Program Learning Outcomes (PLO): End of Didactic Student Survey, Faculty/Staff Survey, Preceptor Student Preparedness Survey.
Benchmark: Student, faculty and preceptor ratings will exceed 3.5 on the 5-point Likert scale for 100% of surveys.

Outcome Measure B: Success on Summative Evaluations
Benchmark: 85% of students pass all five components of the program summative examination after the second attempt

Outcome Measure C: PANCE first-time test take pass rates.
Benchmark: Each cohort achieves a First Time Taker PANCE Pass Rate at or above the 5-year running average national pass rate.

Program Goal 3: Educate physician assistants in a generalist model prepared to practice in a variety of health care settings and disciplines

Outcome Measure: Student performance on discipline-specific PAEA EOR™ Exams
Benchmark: Each cohort will meet or exceed the national average for each PAEA EOR™ Exam

Program Goal 4: Engage faculty and students in active and on-going professional, scholarly, and community engagement activities

Outcome Measure A: Faculty participation as committee members and leaders in local, state and national PA professional organizations.
Benchmark: Faculty will provide volunteer service to, serve on committees, or hold leadership roles in 66% or more of the six applicable local, state, and national PA professional organizations.

Outcome Measure B: Faculty and Student Peer-Reviewed Presentations and Journal Articles.
Benchmark: The program will have a minimum of 6 peer-reviewed presentations or journal articles annually.

Outcome Measure C: Faculty and Student participation in community service activities.
Benchmark: 100% of Faculty and Students will participate in community service activities.

Lenoir-Rhyne University

Master of Science in Physician Assistant Studies Program

Primary Care Education Plan

In support of the North Carolina General Assembly Senate Bill 27, amended by House Bill 729 mandate that each school in the state that educate medical/health care providers present information about efforts to increase the number of students entering primary care, the Lenoir-Rhyne University PA Program as a new program graduating its first cohort in May 2018, has focused on the following:

1. Identifying qualified applicants from medically underserved counties in the state with a shortage of primary care providers, particularly western North Carolina, that have an interest in or have expressed the intent of returning to their home areas to practice medicine

2. The curriculum has a primary care focus

3. Emphasize the need for primary care providers in North Carolina

4. Encourage graduates to enter primary care medicine

5. Arranging for clinical rotations with providers and facilities in primary care settings focusing on geographic areas of need

6. Arranging for primary care providers form areas of need to give lectures in the program

7. Direct students to loan repayment /forgiveness opportunities available to them for providing primary care services in areas of need

8. Encourage students that are considering going into a medical specialty to work in a primary care setting before moving into a specialty area

9. Encourage students to do research for their Capstone in Primary care and/or underserved areas.

Over half of our first graduating cohort has expressed a desire to work in primary care.

2017-2018 Update:

Primary Care Medical Education Plan

Report to the Board of Governors

University of North Carolina System

Submitted by:

Christina Beard, MPAS, PA-C

Director, Methodist University Physician Assistant Program

April 16, 2018

A report in response to the General Statue 143-613 as amended by Chapter 507 of the 1995 Session Laws (House Bill 230) of the North Carolina Assembly

Introduction

Methodist University Physician Assistant Program (MUPAP) enrolled the first small cohort of four students in 1994 with the goal of recruiting and maintaining students in southeastern North Carolina. Our vision has changed some over the years to expand beyond southeastern North Carolina, but our mission of recruiting for rural primary care has remained the same. Our mission statement: To develop competent clinicians within a supportive, engaging, culturally diverse environment which fosters spiritual, academic and social growth. Our graduates will become integrated into communities striving for excellence in healthcare through compassion, professionalism, and lifelong learning. Our faculty support this mission and we have received support from the Health Resources and Services Administration (HRSA) with a training grant, Scholarship for Disadvantaged Students (SDS). This project employs targeted recruitment, education, training, placement, and support to 32 disadvantaged physician assistant students to address the shortage of primary care providers underserved counties in Southeastern North Carolina. This project will result in disadvantaged students, including underrepresented minorities, in the target counties demonstrating 1) increased application and matriculation of those with high financial need, 2) increased completion of didactic training and clinical experience students, and 3) increased educational and clinical preparation of for careers in primary care and with medically underserved communities (MUCs), 4) increased placement of graduates in primary care and underserved communities.

Methodist University is located in the city of Fayetteville in Cumberland County, North Carolina. Cumberland County lies in the southern-central portion of the state and is part of a four-county area with the highest density of American Indians in the state. As recipients of this grant, we have worked it increase number of SDS recipients who are both from medically underserved areas and who are likely to return to their communities to work. There are a number of ways we work with the recipients to accomplish this goal. The SDS recipients are:

- Encouraged to complete Clinical Research Project course (PHA 5710) in a topic related to primary care and underserved communities/populations.
- Encouraged to complete at least two didactic clinical experiences in a medically underserved area.
- Encouraged to complete at least two clinical rotations (10 weeks) in a medically underserved area, with one being in primary care. Primary care rotations are defined as Family Medicine, Pediatrics, and Internal Medicine.
- Encouraged to participate in at least one recruiting event per year. Examples of recruiting events are, but not limited to: graduate school fairs, applicant interviews, on-campus presentations/seminars, off-campus presentations at universities and high schools.
- Encouraged to serve as a mentor to current SDS recipients after graduation.

Efforts to increase the number of primary care providers in MUCs include:

Recruiting:

MUPAP has continued recruiting efforts with HBCUs, American Indian associated universities, Health Occupation Students of America (HOSA) high school organizations, and high schools and middle schools that are located in rural and medically underserved areas of NC. Below is a log of recruiting presentations and visits that have been completed. SDS recipients have participated and will continue to participate in recruiting efforts associated with our targeted institutions.

- 3/14/2017: Purnell Swett High School (Purnell Swett High School, Lumberton, NC)
    - Private presentation to HOSA group
    - URM and Disadvantaged backgrounds
- 3/30/2017: HOSA State Convention (Greensboro, NC)
    - High school state convention
    - URM and Disadvantaged backgrounds
- 4/3/2017: Max Abbott Middle School (Methodist University)
    - Presentation and tour of PA facilities
    - Some, not all, URM and disadvantaged backgrounds
- 4/18/2017: Cumberland County Upward Bound Math and Science Program through Fayetteville State University (Methodist University)
    - Presentation and tour of PA facilities
    - URM and Disadvantaged backgrounds
- 4/28/2017: St. Pauls Middle School (St. Pauls Middle School, St. Pauls, NC)
    - Private presentation to 8th grade Science Classes
    - URM and Disadvantaged backgrounds
- 11/1/2017: Fayetteville State University (FSU, Fayetteville, NC
    - Recruiting fair
    - URM and Disadvantaged backgrounds
- 1/23/2018: University of North Carolina at Pembroke (UNCP, Pembroke, NC
    - Private presentation to Health Professions Club
    - URM and Disadvantaged backgrounds

Curriculum Focus on Primary Care:

The program's curriculum is 27 months in length, consisting of seven semesters. Students begin the didactic phase of the program in August and graduate 27 months later in December. The curriculum is broken down into two phases: Didactic (3.5 semesters) and Clinical (3.5 semesters). As a program, we have emphasized a strong foundation in primary care in our training both in the didactic and clinical phases. Our didactic curriculum (listed below) focuses on all areas of medicine. However, classes like Physician Assistant Orientation, Medical Ethics, Health Promotion/Disease Prevention, and Critical Thinking are structured to allow the PA student classroom learning to be effectively motivated to meet the critical shortage of healthcare providers. All students complete courses that cover important for providers in underserved areas of NC. For example, the Health Promotion Disease Prevention course describes and encourages development of cultural sensitivity as a component in effective health communication and the need for awareness and understanding of measures to address barriers such as poor health literacy. Our current clinical rotations allow for twenty-five weeks out of fifty weeks (50%) to be mandatory primary care rotations.

Preceptor Activities/Clinical Exposure:

At the time of this report, the Class of 2018 has completed their fourth clinical rotation. SDS recipients in this cohort are placed in underserved or rural areas for their primary care rotations (Family Medicine I and II, Pediatrics, Internal Medicine I and II, and elective, which is in a primary care field), when available. Between the five recipients, six clinical rotations have been completed in these areas with a total of 1,176 patient encounters and 930 hours of contact. We will continue to collect data from these students as they progress through their clinical year. In addition to the SDS recipients, all MUPAP students are placed in at least one rotation in an underserved or rural area for their primary care and elective rotations.

The Class of 2019 began their didactic clinical experiences in February, 2018. These are half day shadowing experiences for our first year students. Almost all of these experiences are located in the Fayetteville, which is an underserved area for primary care.

Mentoring Activities/Advising:

The Student Success Committee (SSC) has met with SDS recipients to talk about expectations, barriers and challenges they have faced and will face in the areas where they plan to return. The SSC is in place for all MUPAP students who may struggle academically as a support system for retention and additional advising avenue.

Retention Activities:

Each MU graduate program maintains internal retention initiatives to ensure all students achieve competency. MUPAP's internal retention initiative is the Student Success Committee (SSC). MUPAP defines competency as earning a minimum score of 70% on each examination or written assignment. Any performance less than 70% is interpreted as not obtaining competency on a topic. The SSC was formed in 2013 to support PA students in maintaining competency throughout the program. The majority of students are identified as "at risk" (low score on assignments or exams, failure to achieve competency in class, etc.) once they are in the program. However, a number of students are identified as "at risk" during the Admissions process. These are typically applicants who have don't have excellent academic records, but have stellar medical experience and Admissions interview (or any combination thereof). Through ongoing program assessment, we see that the majority of at-risk students are DB/URM.
SSC co-chairs are full-time MUPAP faculty members, Dr. Lisa Oxendine and Dr. Greer Fisher. They perform SSC-related advising, planning, development, and interventions as part of their job duties in service to the department and the university.

Other Campus Retention and Support Resources:

A Systems and Reference Librarian from the university's Davis Memorial Library is a senior member of the Academy of Health Information Professionals who offers subject-specific instruction to health science programs on campus. Since 2011, this Librarian has been embedded in PA research classes to guide students on constructing a research question using PICO (patient, intervention, comparison, outcome); searching online databases and resources including PubMed, the Cumulative Index to Nursing and Allied Health Literature, Proquest Health and Medical Complete, Proquest Nursing and Allied Health Sources, Science Direct: Health and Life Sciences, SpringerLink, and the Wiley Online Library, DynaMed, The Cochrane Library, and Natural Medicines; and using the online Zotero tool for collecting and managing sources.
All PA students have access to university learning resources including the Davis Memorial Library (DML) resources and Writing Center services. The DML is a 30,000 sq. ft. facility with access to 78,000 books, audiovisuals, and bound periodicals; over 258,000 electronic books; and 25,000 microform units. The library employs the Proquest's Summon as its discovery service and provides 24-hour online access to special collections, including a Health Sciences Collection, Teaching Material Collection, Reference Collection, and Special Collections.
PA students have access the library's individual and group study rooms, seminar room with interactive smart touch monitors, state-of-the-art teleconferencing system, a video wall, multimedia designated workstations, and a Library Instruction Conference Room with 29 workstations and 24 laptop computers.
The university's Writing Center is located inside the DML and offers assistance free to students, faculty, and staff. The Writing Center provides an orientation to all PA students at the beginning of the academic year. Writing Center consultants are available to assist PA students with writing

assignments as well as fostering the skills and confidence needed for continued scholarship and academic success. The Center offers support for multiple types of written work, including research and publication projects, cover letters, resumes, and grant proposals.

New Faculty/Partnership with Health Providers in MUCs:

MUPAP maintains partnership with physicians and PAs throughout the region through the alumni network, clinical sites and preceptor relationships, faculty-practitioners, and annual fundraisers. The hiring of Lisa Huggins-Oxendine, PA-C, DrPH in 2014 has significantly increased the program's connections with providers in rural and medically underserved areas in southeastern NC. Dr. Huggins-Oxendine practiced family medicine for over a year, then in pediatrics in Robeson County for 18 years, and thus has relationships with numerous primary care providers in the target areas.

Summary

MUPAP remains committed to education primary care providers. Our efforts over the years have proven successful with our last three graduate surveys demonstrating that more the 65% of our last three cohorts have become employed in primary care. We look forward to continuing our efforts with the assistance of the HRSA SDS grant, the university and the local community.

UNC- Chapel Hill

The UNC PA program continues to develop the primary care rotations at the critical access Chatham Hospital, the Red Springs Clinic (an FQHC) in Red Springs, NC. We are now partnering with Johnston Hospital as well. Our students rotate through the UNC Family Medicine Center.

Wake Forest University

Wake Forest Department of PA Studies has been working to expand the primary care workforce for PAs in North Carolina in several ways. While many of the enhancements occurred within the formal curriculum, others occurred through our research and advocacy efforts. Within the PA Program, we ensure a comprehensive primary care-based curriculum with a focus on evidence-based medicine and care for underserved populations. Overall, the curriculum is based upon an approach to medicine from a generalist's perspective. Even when more characteristically specialized medical diagnoses are taught or presented in our case-based learning format, a holistic approach is embedded within those topics; specifically a focus on long-term follow-up, health maintenance, preventive care and the role of primary care providers in continuity management.

Our admissions process considers both cognitive and non-cognitive attributes when selecting matriculants. In addition to a centralized application process focused on academic qualifications, we require applicants to complete a supplemental application that evaluates important non-cognitive traits in our applicants. Questions focus on important topics such as diversity, adversity, volunteerism, and leadership. Two questions specifically ask applicants to describe past experiences with underserved populations (in rural and/or urban areas), and whether they intend to practice in an underserved area in the future.

During the didactic year, primary care medicine and care of the underserved are highlighted throughout the curriculum. Our inquiry-based learning cases are developed around care to at-risk patients in rural or underserved areas. Eighty percent of the case-based learning topics occur in primary care settings across the lifespan. Of these, 24% include a pediatric primary care focus and 24% have a geriatric primary care focus. The remaining cases cover non-geriatric adults. Every student receives training including a didactic session and a practice activity in working with a language interpreter. Students and recent graduates have indicated the training was very helpful in practices with a high volume of non-English speaking patients. In the year-long course entitled "Patient Care", students learn the aspects of taking a history and performing physical exam techniques with the overarching emphasis on generalist approaches. Included in this course is a recurrent objective to cover health maintenance and preventive care for infants, children, adolescents, young and middle-aged adults and seniors. Coursework in Pharmacology places the emphasis on generalist use of prescription and over-the-counter medications so that students are prepared for the breadth of care options in this realm rather than going into significant depth in subspecialty-guided management options and algorithms. Additionally, our PA Program's educational objectives in laboratory and diagnostics as well as instruction in procedures maintain an overarching emphasis on the approaches a generalist provider would take. Examinations during the didactic year maintain a focus on primary care in both standardized multiple choice and practical exams by including questions identified as "health maintenance". Students are instructed in, and expected to cover long-term follow-up issues on acute and chronic medical diagnoses during their standardized patient exams. They are guided to think through even subspecialty-focused care as requiring partnership with primary care provision and coordination of care that is inherent in a primary care scope of practice.

The students are also encouraged to participate in community services such as the Delivering

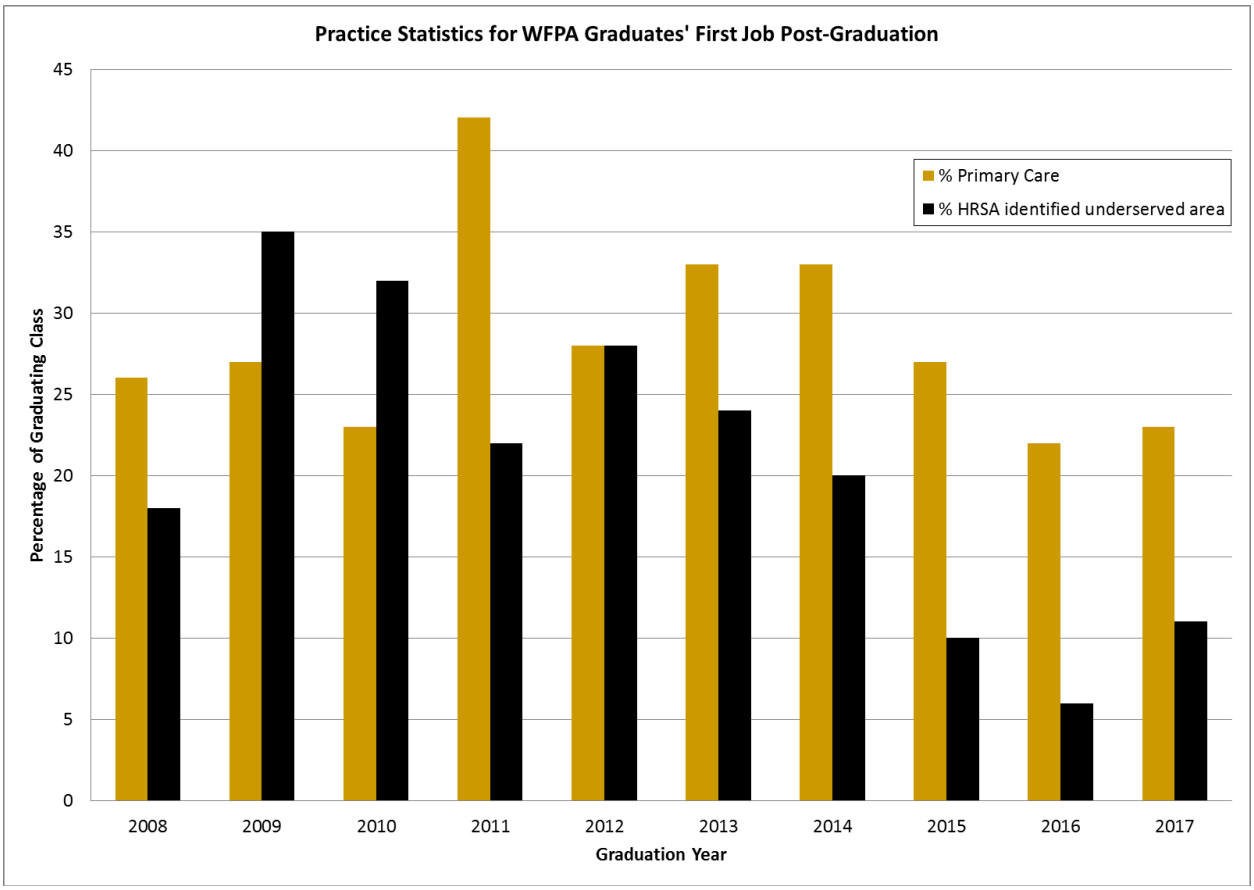
Access to Care (DEAC) student-run free clinic serving uninsured, low-income residents of Winston-Salem and surrounding areas. Many of the PA students volunteer at the DEAC clinic throughout their student career at Wake Forest. Students are also required to spend an evening at the SECU Family House a respite home for families and patients as they seek medical services. During the clinical year, students are required to complete ten rotations with four being primary care focused (family practice, pediatrics, women's health, and internal medicine). Additionally, students must complete four weeks of Behavioral Health to ensure they are exposed to patients with psychiatric and psychological problems that frequently present at the primary care point of entry. An additional four weeks focuses on adult internal medicine and related specialties that provide them with exposure to the most common primary care presentations in the major organ systems such as cardiac, pulmonary, musculoskeletal, dermatologic and ear/nose/throat. Many of the students choose primary care electives. The program has a robust cohort of primary care preceptors in whose practices the students complete their rotations. All clinical year students complete an eight-hour "Smiles for Life" module that focuses primary care providers on oral and dental health knowledge and training. Students complete this module prior to entering their clinical year.

Students are required to complete at least one primary care rotation in a medically underserved, health professional shortage or underserved rural area. Of our current primary care preceptors within the state of North Carolina, 35% are in HRSA-designated medically underserved or health profession shortage areas, 43% are in HRSA-designated rural areas and 26% are in western North Carolina. The department is constantly working to provide the students with a wide variety of different types of sites in which to complete an underserved medicine rotation.

Within the program but outside of the formal curriculum, we have made several enhancements such as continuing to develop our partnership with Appalachian State University on a satellite campus in Boone North Carolina. The expanded campus in Boone has allowed our students to understand better the health care challenges facing rural communities first hand. This new campus has also enabled us to improve recruitment of students interested in rural health. The partnership resulted in our participation in a Golden Leaf grant awarded to Appalachian State University with an emphasis at improving access and chronic care through telehealth in the Appalachian community.

Outside of the formal curriculum, the Department of PA Studies has led several initiatives aimed at increasing the primary care workforce. For example, in partnership with the VA in Salisbury, our institution was awarded one of the six fully funded VA Post Graduate PA fellowships focused on patient-centered medical homes. These Patient Aligned Care Team fellowships give newly graduated PAs the opportunity to learn to manage care in a patient-centered medical home model focusing on the needs of veterans in the community.
Finally, the Department has sponsored research aimed at determining the scope and cause for primary care shortages in the state from the PA perspective, by looking at employment and admissions data. Hopefully, a better understanding of the factors leading to PA decisions about whether to enter primary care will allow our program to adopt more efficient strategies to enhance the primary care workforce in North Carolina.

Year of Matriculation	Total Applicants	NC Applicants	Total Matriculants	NC Matriculants
2013	1282	302 (24.6%)	61	29 (45%)
2014	1408	366 (26%)	91	57 (65%)
2015	1461	335 (23%)	90	35 (39%)
2016	1324	282 (21%)	90	41 (46%)
2017	1434	332 (23%)	88	34 (39%)
2018	1296	330 (25%)	89	46 (52%)



The Wingate program is in the final phase of a Golden Leaf grant with Blue Ridge Community Health Services (BRCHS) in western NC. The grant provided for the placement of clinical students in rotations at BRCHS rural family practice clinics. The purpose was to increase awareness and educate students in the practice of rural medicine and hire graduates to fill the health care needs of rural western NC. At the onset of this project, one of the faculty at Wingate developed modules in rural health for didactic students. Several of the classes include: Appalachian and Native American Health, Rural Agricultural Medicine, Hispanic Worker Health, and LGBTQI Spectrum of Health Care. These classes are now incorporated into our curriculum in the Health Care Issues I course.

The opportunity for the rural practice experience led to 4 students being offered/accepting jobs in the discipline in western NC. The students who did clinical rotations in rural health were surveyed after their experience. A few of their comments:

"Although we learn extensively about preventive health in our didactic year, my experience in rural health gave me a deeper understanding as to what prevention really means. On this rotation, I saw the devastating effects from years of uncontrolled disease states, from hypertension that lead to a cerebral infarction, to diabetes that led to limb amputation. Patients often did not seek treatment until it was too late. For this reason, I learned not only how to effectively manage chronic disease states, but also how to promote prevention."

"As far as personal development, one big take-away from this rotation is that medicine has no borders. Patients were never turned away because their problem was "out of the scope of the practice." We managed all patients from children, pregnant women, to geriatric patients. The variety of conditions seen in this setting gave me the opportunity to develop my clinical problem-solving skills, expand my differential diagnosis and was overall a very rewarding experience."

"My experience in rural health gave me a deeper understanding of different cultures. More than any other rotation, patients used a large variety of homeopathic and self-treatments. I learned how to better listen and understand where patients were coming from, even if it was difference from my background. Language barriers gave me the opportunity to further develop my history-taking skills."

In Health Care Issues II, students explore the medical home concept of providing primary care that is comprehensive, team-based, accessible and focused on quality and safety. Students also learn the skills to work with a variety of patients including low health literacy and how to create behavior change using motivational interviewing.

In September 2017, Wingate University partnered with a clinic in the community that provides adult primary care to the underserved. A full-time PA, employed by the University, is the primary provider for clinic patients. In addition, the PA serves as a regular preceptor for our PA students. In

conjunction with the clinic, pharmacy, nursing and physical therapy students from Wingate are involved in patient care at the clinic as well.

The Wingate PA program, as with the majority of programs, trains students as primary care PA's. Over the last 10 years, there are fewer positions available to graduates in primary care medicine. A recent search for PA jobs in the greater Charlotte area showed that out of 41 open positions, only 3 were in Family Practice and 2 in pediatrics; 26 of the 41 were in Urgent Care.

Although a number of PA's enter our program each year with a propensity toward Primary Care medicine, there is no guarantee that a position will be available in the discipline after graduation and certification in the greater Charlotte area.

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Attachment A

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.

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

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

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

- o Require specific preceptor training
- o Offer training/materials to preceptors (not required)
- o None of above
- o 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.

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

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

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

- o Behavioral health/psychiatry
- o Family Medicine
- o General surgery
- o Internal Medicine
- o OBGYN
- o Pediatrics
- o Other _____
- o 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.

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

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

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

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

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

If "Payments" checked above, then:

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

- o Less than $250 month
- o $250-$499 month
- o $500-$999 month
- o $1,000 -$1,499 month
- o $1,500 – $1,999 month
- o $2,000 -$2,499 month
- o $2,500 - $2,999 month
- o $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?

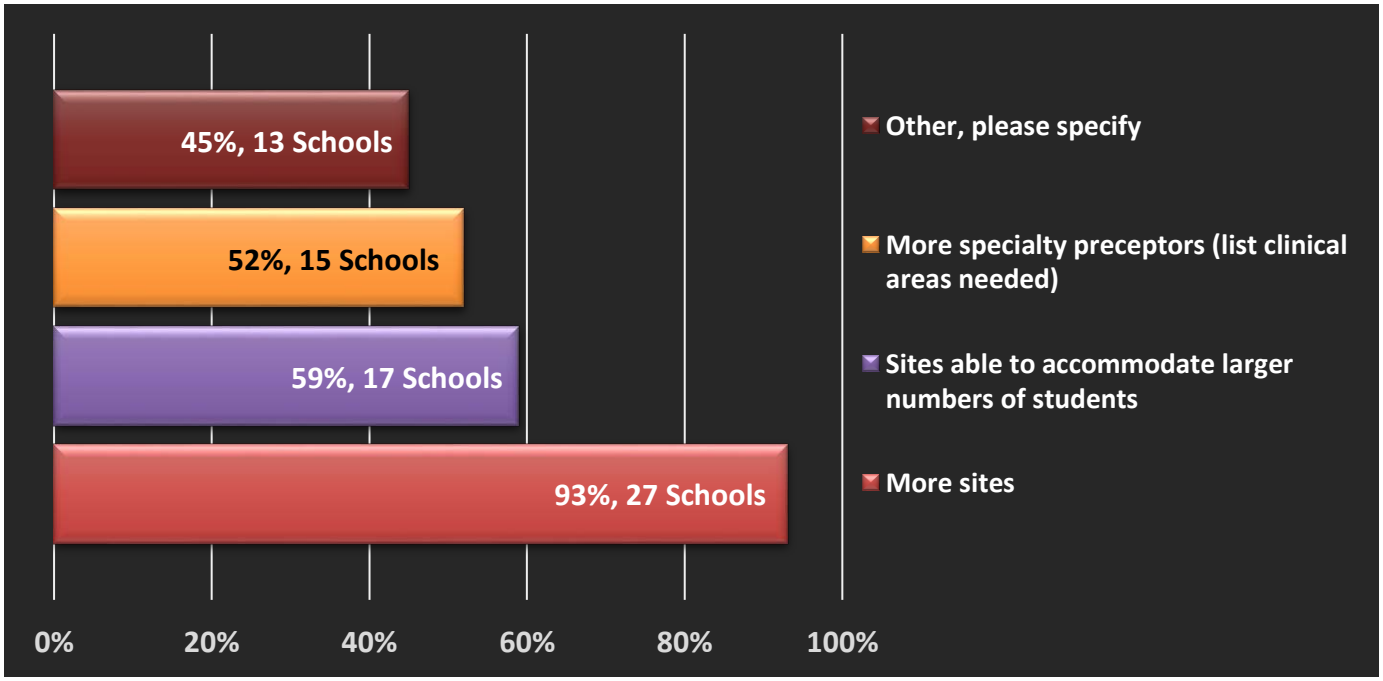
17. To complete the survey, please enter any comments about your precepting needs in the space below and select "Submit" when finished.

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)					

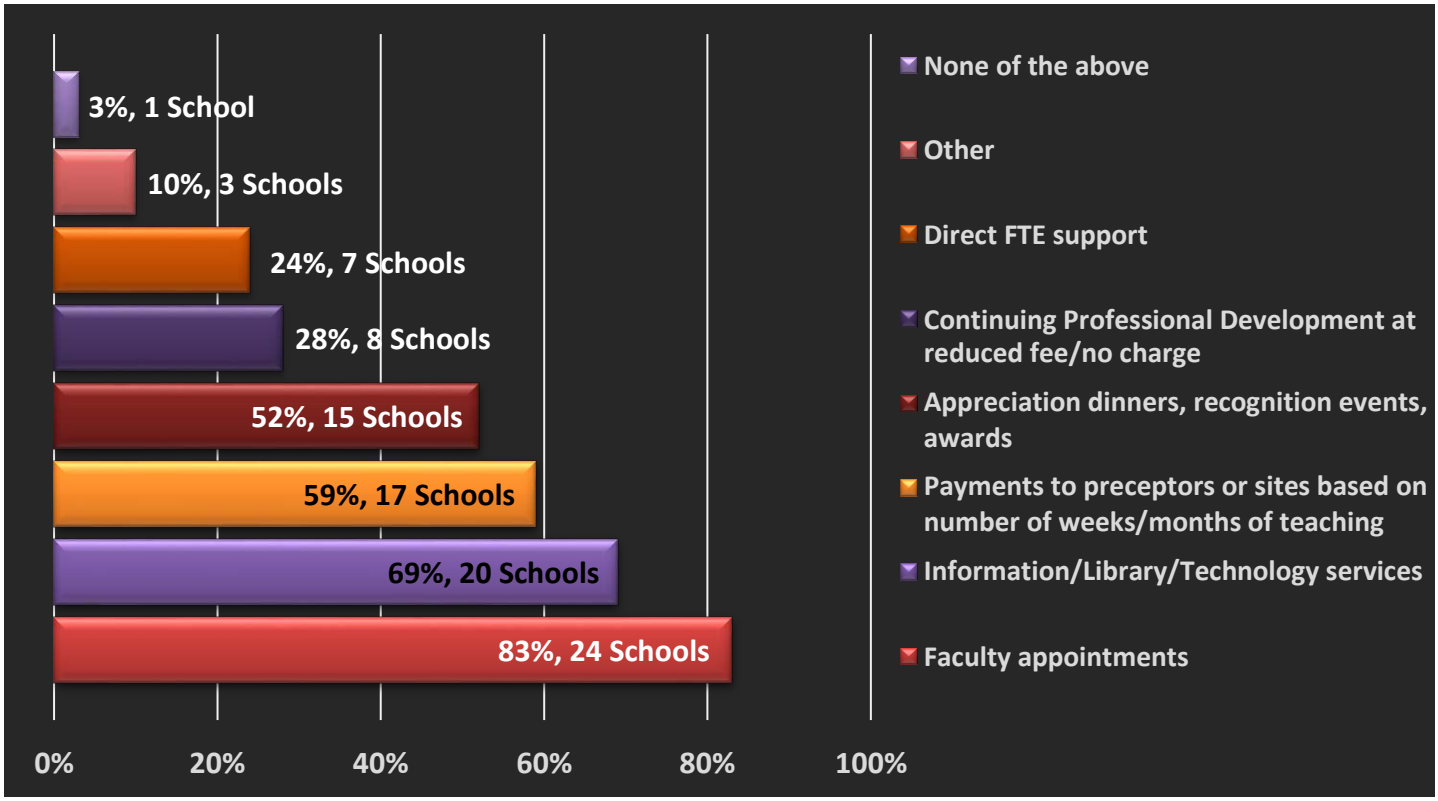
Appendix D: Graph of needs for precepting sites

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.)



Attachment B

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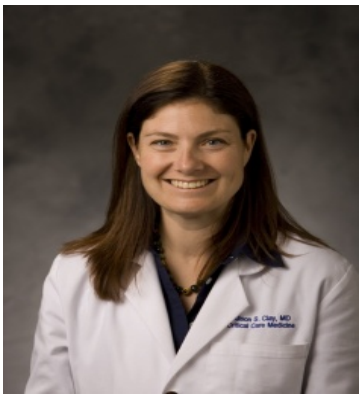

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Attachment C

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. *Establish 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. *Launch 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.