

**NORTH CAROLINA INSTITUTE OF MEDICINE
2007 TASK FORCE ON PRIMARY CARE AND SPECIALTY SUPPLY
UPDATES TO RECOMMENDATIONS IMPLEMENTATION: 2013**

In the future, North Carolina will face challenges in meeting the North Carolinians' demands for health care. The state's health care needs are expected to increase due to population growth, aging of the population, and an increase in the prevalence of chronic conditions.{{714 North Carolina Institute of Medicine Primary Care and Specialty Supply Task Force 2007}} Additionally, the Patient Protection and Affordable Care Act (PPACA) of 2010 is anticipated to exacerbate the increase in demand.{{4033 Hofer,A.N. 2011}} The 2007 NCIOM Primary Care and Specialty Supply Task Force focused on options to expand the quality and productivity of existing practices, develop new models of care that reduce the need for health care providers, and expand the supply of physicians, nurse practitioners (NPs), physician assistants (PAs), and certified nurse midwives (CNMs).

In May 2008 the North Carolina Institute of Medicine (NCIOM) released a report entitled "Providers in Demand: North Carolina's Primary Care and Specialty Supply." The report was a culmination of a year of work by the NCIOM Primary Care and Specialty Supply Task Force. The Task Force was a collaborative effort with the North Carolina Health Professions Data System and the Southeast Regional Center for Health Workforce Studies¹ at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill, and the North Carolina Area Health Education Centers Program. The Task Force consisted of 35 members from across the state representing professional associations (including allopathic and osteopathic physicians, NPs, PAs and CNMs), provider specialties, academic health centers, other health professions training programs, residency directors, hospitals, and the North Carolina Office of Rural Health and Community Care. The Task Force examined trends in provider supply including: (1) types of providers (by specialty) likely to be needed to address future health care needs; (2) areas of the state that experience persistent shortages; and (3) underrepresentation of certain ethnic and racial minorities in specified health professions. A generous grant from the Kate B. Reynolds Charitable Trust funded the Task Force work.

The Task force made 33 recommendations on public and private policy options to ensure access to the needed providers for North Carolinians, and the appropriate combination of providers delivering care. The Task Force recommended engaging in multiple strategies to improve provider supply to avoid situations such as creating new medical school slots but no residency slots, thereby reducing in-state retention. The report recommended a combination of strategies to increase the yearly educational production of both physician and non-physician providers, increase the influx of providers into the state, and improve the capacity of the health system to effectively manage and improve the health of North Carolinians.

¹ The Southeast Regional Center for Health Workforce Studies was funded from 2003-2006, and work has been continued through the NC Health Professions Data System and the Program on Health Workforce Research & Policy, which was created in 2012. (Gaul, Katie. Research Associate, Program on Health Workforce Research & Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Written (email) communication, July 23, 2013.)

This 2013 update includes information about the progress, or lack thereof, in implementing the 2007 Task Force recommendations. In total, progress has been made in implementing 24 (73%) of all the Task Force recommendations. Six recommendations (18%) have been fully implemented, and 19 (58%) have been partially implemented. No action has been taken to implement 8 (24%) of the 33 recommendations.

TOTAL RECOMMENDATIONS: 33

- **FULLY IMPLEMENTED: 6**
- **PARTIALLY IMPLEMENTED: 19**
- **NOT IMPLEMENTED: 8**

OVERALL PROVIDER SUPPLY

Recommendation 2.1 (Priority Recommendation) PARTIALLY IMPLEMENTED

a) **The North Carolina General Assembly should appropriate \$170,000 to support and expand the health professional workforce research center charged with examining current and future needs for health professionals, which is housed within the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill. Research should be conducted at the individual practitioner level as well as the practice level.**

The Center will expand its current research to include analyses that:

- 1) **identify the need for physicians, nurse practitioners (NPs), physician assistants (PAs), and certified nurse midwives (CNMs) to meet the health care needs of the state 5, 10, and 20 years into the future;**
- 2) **identify new models of care that can improve the quality and efficiency of care offered by North Carolina providers;**
- 3) **examine the distribution of physicians, NPs, PAs, and CNMs across the state;**
- 4) **examine trends in the supply of minority health professionals in comparison to the general population and examine percentage of underrepresented minority students and residents who receive training in North Carolina, but who leave the state for practice;**
- 5) **examine trends in the numbers of primary care and specialty providers by specialty area;**
- 6) **examine changes in health status and sociodemographic factors that might influence future health care needs so as to examine the mix of health care professionals necessary to address the state's health care needs; and**
- 7) **identify barriers that affect entry into the health professional workforce or continued practice, if any.**

b) **The North Carolina General Assembly should create an ongoing Health Workforce Policy Board that is charged with developing strategies to address impending health professional workforce shortages. The Board will include representation from the North Carolina Office of the Secretary, North Carolina Department of Health and Human Services, North Carolina Office of Rural Health and Community Care, North Carolina Area Health Education Centers Program, five North Carolina academic health centers, North Carolina Community College system, relevant professional associations and licensing boards, North Carolina Hospital Association, North Carolina Medical Society Foundation, and nonmedical public members. The Board shall identify strategies to:**

- 1) **develop new models of care that encourage quality and efficiency of health care services;**
- 2) **increase the overall supply of physicians, NPs, PAs, and CNMs to meet the unmet health needs of the state's growing population;**

- 3) **encourage more health professionals to practice in health professional shortage areas;**
- 4) **establish priorities for which types of provider specialties are most needed to meet the health care needs of the state;**
- 5) **increase the supply of underrepresented minorities in the profession;**
- 6) **ensure the mix of health professionals is appropriate to meet the changing health care needs of the state; and**
- 7) **address barriers that affect entry into the health professional workforce or continued practice, if any.**

The Health Workforce Policy Board should report its findings and proposed recommendations on an annual basis to the University of North Carolina Board of Governors, the North Carolina State Board of Community Colleges, and the North Carolina General Assembly.

Multiple other work groups have made similar recommendations that North Carolina establish a state level workforce advisory board to oversee state workforce developments. The NCIOM Health Reform workgroups, in *Examining the Impact of the Patient Protection and Affordable Care Act in North Carolina* (2013), also recommended the creation of a workforce advisory board that would include representatives from the North Carolina Department of Health and Human Services (NCDHHS), the North Carolina Office of Rural Health and Community Care, the North Carolina Area Health Education Centers (AHEC), as well as North Carolina community colleges, universities and academic health centers. Other work, including a task force created at the UNC School of Medicine in 2008, recommended the creation of a graduate medical education board to coordinate physician residency training in the state and strategically plan for training the specialties most needed in North Carolina.

Funding has not been provided by the North Carolina General Assembly (NCGA) to support this effort to collect workforce data or engage in comprehensive planning to address health professional workforce needs. However, the North Carolina Health Professions Data System (HPDS) at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill continues to monitor the supply and distribution of health professionals across the state. Funded in part by AHEC, the HPDS collects licensure data from the health care professional licensure boards to track health care practitioner demographics, practice locations, specialties, and, for some professionals, amount of time in direct patient care. Funding for the HPDS was cut 10% effective July 1, 2011. The HPDS remains a vital and active component research center on health workforce issues across the state. North Carolina has the oldest state health professions data system in the country, which gives the state a unique advantage in monitoring long-term workforce trends. Recently, HDPS has produced materials including an assessment of health professional diversity in the state and of trends in both undergraduate and graduate medical education.

The Program on Health Workforce Research and Policy (PHWRP) maintains the HPDS. This program is also a source of much research and analysis on other health workforce issues affecting the state and the country. The PHWRP houses the Surgical Workforce Policy Program (SWPP), formerly the American College of Surgeons Health Policy Research Institute (ACS HPRI) funded by the American College of Surgeons. The SWPP conducts analyses on the

United States surgical workforce. Ongoing projects include the Surgical Workforce Atlas, an interactive, web-based map that shows, county-by-county and state-by-state, areas where surgeons and/or other physicians are in shortage. Examples of additional SWPP projects include the development of an index of surgical underservice and a study of state level Graduate Medical Education (GME) financing and decision-making policies. The PHWRP is also leading the development of a web-based United States physician projection model, which will account for physician supply, demand, distribution, and mobility across states over time. The model will enable users to simulate the effects on physician supply in response to proposed health workforce policies, changes in physician characteristics and behaviors, and trends in population demographics and disease burden. Unlike prior proprietary models, this model will enable users to see and modify all model inputs. Finally, the PHWRP serves as a resource for health workforce stakeholders, employers, policymakers, and researchers throughout the state and country, providing assistance in response to requests for HDPS data and technical assistance.

With the closure of the North Carolina Center for Nursing in 2008, there is additional pressure to have a well-funded center to monitor and address nursing workforce issues continually across the state. Nurses are the largest health professional workforce in the state.

The NCGA did propose a Health Workforce Policy Board in 2009, but did not pass this action due to budget constraints. The Patient Protection and Affordable Care Act (ACA) included provisions to support state-level and regional workforce centers, but it did not include direct appropriations to support these provisions. However, in 2010, funds were made available by the Health Resources and Services Administration (HRSA) Office of Workforce Policy and Performance Management to 26 states to complete comprehensive health care workforce development planning. Through this effort, the North Carolina Commission on Workforce Development within the North Carolina Department of Commerce was awarded a one-year planning grant of \$149,595. The project was led by staff from the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill. The Sheps Center, guided by a Workforce Intermediary Committee assessed information on North Carolina's current health professional workforce, the range and number of professionals needed to staff a patient centered medical home (PCMH), and the adequacy of current training. These analyses included emerging new models of care and the types of health professionals needed to staff them. This group worked to identify new services and roles that need to be developed. The group then focused on identifying strategies to increase the primary care workforce by 10-25% over the next 10 years.

The Cecil G. Sheps Center for Health Services Research was recently named one of three national health workforce research centers through a cooperative agreement with HRSA. The Carolina Center for Health Workforce Innovation, Research and Policy will conduct and disseminate timely, policy-relevant research on the flexible use of health care workers to improve health care delivery and efficiency in order to meet the needs of the patient population. Additionally, the Sheps Center was named as a key collaborator in a new technical assistance health workforce research center, led by the Center for Health Workforce Studies at SUNY-Albany. This center, also funded through a cooperative agreement with HRSA, will assist states

with health workforce data collection and analysis needed for effective health workforce planning.²

At the national level, the federal government created a National Health Care Workforce Commission to establish workforce priorities and develop national workforce strategies. Thomas C. Ricketts, III, PhD, Professor, Department of Health Policy and Management, Gillings School of Global Public Health and Deputy Director for Policy Analysis, Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill, was one of the 15 members appointed to the Commission. However, neither state nor federal funding has been made available to support the work of this commission and/or the expansion of existing state workforce planning initiatives.

Recommendation 2.2 (Priority Recommendation) **PARTIALLY IMPLEMENTED**
In order to develop and implement new models of care:

- a) North Carolina foundations should help fund new models of care for improving quality and efficiency of primary and specialty care across North Carolina. New models should be evaluated to determine if they improve quality of care and/or efficiency.**
- b) Medical schools, other health professions schools, and residency programs should incorporate successful new models of care into training curricula and ensure that students and residents have the opportunity to practice using new models.**

The State Health Plan, Division of Medical Assistance, and private insurers should modify reimbursement policies to support the long-term viability of new models that are shown to improve quality and/or efficiency.

North Carolina foundations have and continue to support many of the health care innovations in the state. Additionally, nationally recognized Community Care of North Carolina (CCNC), described more fully below, has been critical to the formation, support, and expansion of new models of care in North Carolina. With support from the state and federal governments, as well as North Carolina's foundations, health providers across the state have developed and tested numerous new models of care. Many of these innovations have been expanded when they were shown to improve quality and efficiency. While many new models of care have been tested and incorporated into practice over the past six years, medical schools, other health professional schools, and residency programs have been much slower to incorporate successful new models of care into training and practice. Additionally, there has been little work to reform payment structures to support the long-term viability of the new models of care that have been shown to improve quality and/or efficiency in North Carolina. There have been a few efforts to try new payment structures and those are described below as part of the description of new models of care.

² Gaul, Katie. Research Associate, Program on Health Workforce Research & Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Written (email) communication, September 23, 2013.

New Models of Care

Some of the innovative practices that have shown success over the past five years are described below. Additional information on new models of care that have been or are being tested in North Carolina can be found in Appendix H of the North Carolina Institute of Medicine's Examining the Impact of the Patient Protection and Affordable Care Act in North Carolina report, released in 2013 (available online at <http://www.nciom.org/publications/?impactaca>).

- CCNC was created in 1998 as a Medicaid program to improve access to care, increase quality, and reduce unnecessary utilization. It is structured around 14 regional networks that include, at a minimum, primary care providers, hospitals, safety net organizations, local health departments and social services organizations that work together to manage the health care needs of the Medicaid population in the community. CCNC is a nationally recognized patient-centered medical home (PCMH) model. CCNC provides care to one million individuals served by approximately 1,400 primary care practices, all of which are working to seek certification as patient-centered medical homes. In addition, North Carolina Community Care Network, Inc. (NCCCN), the parent organization of the 14 regional CCNC networks, is engaged in multiple efforts to expand this model to additional patient populations. In 2010, Community Care of Southern Piedmont (CCSP) was one of the 15 communities selected by the US Department of Health and Human Services' Office of the National Coordinator for Health Information Technology to receive a Beacon Community, which awarded over \$15 million for health information technology (HIT) demonstrations. CCSP is one of the 14 CCNC networks covering Cabarrus, Rowan and Stanly counties in North Carolina. The innovations include increasing electronic health record adoption (especially in free clinics, health departments, FQHC's and small practices), increasing provider and patient access to health data, reducing rates of duplicate testing, reducing readmission rates, improving chronic disease care, and increasing quality in pharmacotherapy.^{2,3}
- The AHEC program provides a multitude of services to support and develop new models of care. Through the use of trained and experienced technical and quality improvement consultants, AHEC supports hundreds of practices and thousands of providers in developing systems to enhance the efficient and effective delivery of health care within their practice settings.
- North Carolina also has experience integrating behavioral health professionals into primary care settings, "reverse integration" of primary care professionals into behavioral health practices, and integration of behavioral health professionals in hospitals. This effort is led by the North Carolina Foundation for Advanced Health Programs (NCFAHP) and has been supported by a variety of organizations, including The Duke Endowment, Kate B. Reynolds Charitable Trust, AstraZeneca, NC AHEC Program and North Carolina Department of Health and Human Services.
- Blue Cross and Blue Shield of North Carolina (BCBSNC) has also been active in promoting the concept of the patient-centered medical home (PCMH). BCBSNC has partnered with University of North Carolina at Chapel Hill to design a patient-centered medical home as part of a three-year pilot program beginning at the end of 2012. The facility includes a multidisciplinary team, extended hours, and state-of-the-art

information technology. Evaluation of the model will include patient satisfaction, carrier satisfaction, and clinical metrics.

- North Carolina is also experimenting with bundled payments. This payment model gives providers an incentive to better coordinate care, reduce unnecessary expenditures, and improve quality in order to be able to receive savings. In North Carolina, there are 4 organizations testing bundled payments with CMS, including Blue Ridge Healthcare system, Duke Hospital, First Health Moore Regional, and Amedisys Home Health (in 3 locations in North Carolina).³
- In North Carolina, there are 6 provider groups that have entered into ACO agreements with Medicare, including Coastal Carolina, ACC of Caldwell County, ACC of Eastern North Carolina, Cornerstone Health Care, Triad Healthcare, and Physicians HealthCare Collaborative.⁴ In addition, BCBSNC, Cigna, and United Health Care are all partnering with health care organizations to create ACOs.

These are just a sample of the numerous projects around North Carolina that are testing new models of care. There are also projects focused on medication management, geriatric care, telehealth/telemonitoring, shared decision making, co-location, malpractice reform, and nursing home demonstrations. Additional information on new models of care that have been or are being tested in North Carolina can be found in Appendix H of the North Carolina Institute of Medicine's *Examining the Impact of the Patient Protection and Affordable Care Act in North Carolina*, released in 2013 (available online at <http://www.nciom.org/publications/?impactaca>).

Incorporating New Models of Care into Training

Although there is increased awareness of the need to expose health professions students to new models of care, there has been less action surrounding this effort. AHEC supports placing students in more advanced medical home models so students can experience these new models of care. In fact, the Affordable Care Act includes provisions that offer priority funding to schools that implement patient-centered medical homes and train students within this model.⁵ Funding priorities include programs that use team-based approaches to education; involve patient-centered medical homes; provide training in the care of vulnerable populations; have a track record of training individuals from underrepresented minorities or rural/disadvantaged communities; have formal relationships with federally qualifying health centers (FQHCs), area health education centers (AHECs), or rural health clinics (RHC); and/or train in cultural competency and health literacy. While federal funding for new health professional training programs was *authorized* under the ACA, new funding was generally not *appropriated*. As a result, the state has been unable to seek new federal funding to support these efforts.

While there has not been wide scale adoption of interprofessional training and other methods that support new models of care across North Carolina's health professional training programs, there are programs that have embraced such training. For example, East Carolina University (ECU)

³ Centers for Medicare and Medicaid Innovations.

<http://innovation.cms.gov/initiatives/map/index.html?statePass=NC>. Accessed April 21, 2013.

⁴ NC Medical Society. North Carolina Accountable Care Organizations.

http://www.ncmedsoc.org/pages/advocacy_govt_affairs/nc_acos.html. Accessed April 21, 2013.

⁵ Patient Protection and Affordable Care Act, Pub L No. 111-148, §5301, amending §747 of the Public Health Service Act, 42 USC 293k.

has a history of interprofessional education and maintains an Office of Interdisciplinary Health Sciences Education that coordinates interprofessional education in multiple health science disciplines. In the Department of Family Medicine at The Brody School of Medicine, ECU has established a Center for Integrated Care Delivery, under the direction of the chair, Dr. Kenneth Steinweg. The Center for Integrated Care Delivery focuses on transforming primary care teaching, research and patient care for chronic disease management using an integrated care delivery approach. The Center for Integrated Care Delivery engages patients, partners and learners in medicine, nursing, pharmacy, nutrition, and multiple behavioral health disciplines including health psychology, marriage and family therapy, and social work, and uses both didactic and experiential training sessions for all learners focused on the principles of team based collaborative care. The curricula for medical students now includes training experiences that involve a team of providers working together to comprehensively address patient needs – especially in patients with co-morbid illness. The curriculum for the residents focuses not only on improving knowledge related to integrated care, but on developing specific competencies regarding how to work collaboratively with other health care professionals in the busy primary care setting.

The University of North Carolina School of Medicine has developed two regional campuses, in Asheville and Charlotte. At both, pilot programs have been implemented utilizing a “Longitudinal Integrated Curriculum” (LIC). The traditional block curriculum tends to be highly inpatient oriented, and is sequential (for example, one month of Internal Medicine followed by one month of General Surgery, etc.) The LIC requires students to follow a cohort of students throughout the third year, and provides exposure to core specialties on an ongoing basis throughout the year. The new curricular approach is believed to have a number of advantages including: enhanced training in systems of care; increased focus on ambulatory care; improved preceptor recruitment and retention; improved understanding of team-based care.

Enhancing interdisciplinary team training is a focus of all physician assistant programs in the state and the nation. Recent changes to accreditation for PA programs have added a requirement that all programs must demonstrate interdisciplinary education beyond the physician/physician assistant team.

Recommendation 2.3 (Priority Recommendation) **FULLY IMPLEMENTED**

The North Carolina General Assembly should appropriate:

- a) \$2.5 million to The Carolinas Center for Medical Excellence to increase the number of practices that receive technical assistance under the Doctor’s Office Quality-Information Technology project and to expand this assistance to include pediatric offices; and**
- b) \$4.8 million to the North Carolina Medical Society Foundation to provide grants to small or solo practitioners to purchase health information technologies to improve quality performance and practice efficiencies.**

Since 2007, adoption and meaningful use of electronic health records (EHR) has been a priority across the state. While many large practices have done this on their own, there have also been a

number of efforts to help provide small practices, rural practices and others with technical and financial support for adopting EHRs. Neither The Carolinas Center for Medical Excellence nor the North Carolina Medical Society Foundation received funding from the North Carolina General Assembly. However, both organizations are partners with AHEC, which received \$13.6 million in non-recurring funds in 2010 from the Office of the National Coordinator for Health Information Technology (ONC) to support primary care providers making the transition to electronic medical records. The funding was used to create regional extension centers (RECs) in the nine regional AHECs across the state to support priority practices adopt and meaningfully use electronic health records (EHRs). A priority practice is currently defined as a primary care practice that is in a rural area, an urban underserved practice, or has 10 or fewer providers. These practices are eligible to sign up for REC services at no cost through an online application that can be accessed at the website: www.ahecqualitysource.com.

In addition to helping practices adopt and implement EHRs, the REC staff helps practices with practice redesign through patient-centered medical home recognition and rapid-cycle quality improvement techniques. Each regional AHEC has an REC team with one or more of the following personnel: (1) a Practice Support Coordinator who functions as the project manager responsible for the entire EHR selection/implementation process within a practice beginning with a readiness assessment and ending with achievement of meaningful use; (2) a Technical Assistance Specialist who serves as a product expert and has the technical knowledge to integrate important EHR functions such as lab receipt, e-prescribing, and quality reporting; and (3) a Quality Improvement Consultant who works with the physicians and practice staff to use their new electronic tools to measure care parameters, institute QI teams, and function as a recognized, patient-centered medical home with the goal of achieving optimal care and health outcomes, and meet the federal requirements for meaningful use.

Medicaid or Medicare incentive payments are available to primary care practices and hospitals that implement EHRs and meet meaningful use standards.

Recommendation 2.4 (Priority Recommendation) PARTIALLY IMPLEMENTED
North Carolina medical schools should increase enrollment by 30% (AAMC recommendation). Expansion can be accomplished through an increase in enrollment on existing campuses or through satellite campuses. In expanding programs, medical schools should consider changing admissions criteria or using other strategies to increase the overall supply of physicians practicing in the state, increase the number of physicians who set up practice in underserved areas, increase the number of physicians who specialize in shortage specialties, increase the number of underrepresented minority physicians practicing in the state, and enhance interdisciplinary team training.

UNC-CH has received approval to expand its medical school class from 160 to 230 students, a 44% increase. The UNC-CH School of Medicine increased their medical class size from 160 to 170 in 2011 and added another 10 students in 2012. The additional students are receiving their clinical education at regional campuses in Charlotte and Asheville (see the discussion of Incorporating New Models of Care into Training under Recommendation 2.2). Clinical education for the students enrolled in the Charlotte and Asheville programs will focus on

providing primary care to underserved populations. Planned expansion to 230 students is on hold until further funding is available.

The Brody School of Medicine at Eastern Carolina University expanded its incoming medical school class size to 80 students, up from 73. Furthermore, ECU has received approval to expand its medical school class from 80 students to 120 students, a 50% increase. Similar to the process that UNC-CH is using, ECU is considering using other sites in the eastern part of the state for clinical campuses, though no definite decisions have been made about specific sites. Since no new funding for expansion has been appropriated, the planned expansion to 120 students is on hold until further funding is available.

Both UNC and ECU are beginning to engage in discussions about the social accountability of medical education. In 1995, the NC General Assembly passed a bill requiring the UNC Board of Governors to track the proportion of students at public medical schools who enter primary care residencies (defined as family medicine, internal medicine, pediatrics, or OBGYN) and where they practice 5 years following completion of medical school. The state invests public funds to support both institutions, and these data provide a benchmark to determine the number of primary care providers that remain in the state to serve its population. These data are compiled annually by the Program on Health Workforce Research and Policy at the Sheps Center, and are used to inform discussions about the social accountability of medical education.

Neither Duke University School of Medicine nor Wake Forest School of Medicine has expanded their class size.

Campbell University opened a new school of osteopathic medical school in the fall of 2013 (more information below in Recommendation 2.5).

Clinical Rotations

The increased number of medical school students will exacerbate a chronic problem, the lack of clinical training sites for students. The lack of clinical training sites will only get worse with new programs being established and existing programs expanding enrollments. With expansions at UNC and ECU and the opening of Campbell University's osteopathic medical school in 2013, the number of medical school graduates in North Carolina is set to rapidly expand in the next four years. However, the state does not yet have a plan in place for a concurrent expansion of medical residency slots. The likely outcome of this scenario will be to increase competition for in-state residency positions and may result in a higher percentage of North Carolina medical school graduates entering residency out-of-state.

Recommendation 2.5

FULLY IMPLEMENTED

If current medical schools are unable to increase enrollment by 30%, the North Carolina General Assembly should consider creation of a new public allopathic or osteopathic medical school or provide incentives to encourage development of a new private medical school. Specifically:

- a) **The North Carolina General Assembly should appropriate funds to build a new state-supported allopathic or osteopathic medical school that will focus on increasing the**

supply of physicians who practice in North Carolina, particularly those willing to practice in medically underserved areas or in shortage specialties. Special consideration should be given to creating a medical school that focuses on increasing the number of underrepresented minority physicians in the state, increasing the overall supply of physicians practicing in the state, increasing the number of physicians who set up practice in underserved areas, increasing the number of physicians who specialize in shortage specialties, and enhancing interdisciplinary team training.

- b) Alternatively, as part of state efforts to increase economic development in communities across the state, the Department of Commerce should consider incentives to attract private osteopathic or allopathic medical schools into the state.**

Campbell University opened a new osteopathic medical school in North Carolina in the fall of 2013. The NCIOM report on Primary Care and Specialty Supply was used to provide the underlying rationale for the new school. The school is expected to enroll 150 students per class when it is fully operational. This enrollment would make Campbell the second largest medical school in the state. Campbell's medical school will focus primarily on training students in primary care and family medicine, general surgery, pediatrics, psychiatry and other services, with an emphasis on producing graduates who work in rural areas or regions with little or no health care options. Funding for Campbell's School of Osteopathic Medicine has come from North Carolina foundations, private funders, and tuition.

Recommendation 2.6

NOT IMPLEMENTED

The North Carolina General Assembly should appropriate funds to pay for allocated seats for North Carolina students admitted to osteopathic schools in other states (e.g. Alabama or Kentucky model) with an obligation that students return to practice in North Carolina.

Currently, no funds have been appropriated to support North Carolina students admitted to osteopathic schools in other states.

The North Carolina General Assembly (NCGA) provides funding to support both the University of North Carolina at Chapel Hill School of Medicine and East Carolina University Brody School of Medicine as well as the North Carolina students that attend these schools. The state has also historically provided annual grants for each North Carolina resident enrolled in medical school at either Duke University or Wake Forest University. In 2009, the NCGA passed G.S. 116-9.15. (b), which updated prior legislation to provide annual grants of \$5,000 for each North Carolina resident enrolled at Wake Forest or Duke. The amount of funds available each year depends on the annual appropriation by the NCGA for this program. At this time, the NCGA has not made changes to this legislation to support North Carolina residents who enroll in Campbell's School of Osteopathic Medicine.

Recommendation 2.7 (Priority Recommendation)**FULLY IMPLEMENTED**

- a) **The North Carolina physician assistant (PA) programs should increase student enrollment by 30%. Expansion can be accomplished through an increase in enrollment on existing campuses or through satellite campuses. In expanding programs, PA schools should consider changing admissions criteria or using other strategies to increase the overall supply of PAs practicing in the state, increase the number of PAs who set up practice in underserved areas, increase the number of PAs who specialize in shortage specialties (including but not limited to geriatrics and behavioral health), increase the number of underrepresented minority PAs practicing in the state, and enhance interdisciplinary team training.**
- b) **North Carolina nurse practitioner (NP) schools should increase student enrollment by 30%. In expanding programs, NP schools should consider changing admissions criteria or using other strategies to increase the overall supply of NPs practicing in the state, increase the number of NPs who set up practice in underserved areas, increase the number of NPs who specialize in shortage specialties (including but not limited to geriatrics and behavioral health), increase the number of underrepresented minority NPs practicing in the state, and enhance interdisciplinary team training.**
- c) **The Nurse Midwifery program at East Carolina University should increase student enrollment by 30%.**

Both nurse practitioner (NP) programs and physician assistant (PA) programs across the state have increased in size and number. Additionally, the Certified Nurse Midwifery (CNM) program at East Carolina University has increased enrollment by 100%, from 6 to 8 per class to 16 per class.

Nurse Practitioner Programs

There has been a significant increase in the number of nurse practitioners (NPs) trained in North Carolina. In 2007, there were 3,016 nurse practitioners in North Carolina; today there are more than 4,600.⁶ Increased class sizes, recruitment and the move to the Doctor of Nursing Practice (DNP) as the terminal degree for NP students, have resulted in higher enrollment in many nurse practitioner programs across the state.

Nursing programs across the state have also benefited from funding from the Affordable Care and Patient Protection Act:

- The Duke University School of Nursing received \$1.3 million to increase full-time enrollment in their primary care nurse practitioner programs. The grants will provide many nursing students \$44,000 in tuition support.
- Many schools of nursing in North Carolina, including the University of North Carolina at Chapel Hill, Charlotte, Greensboro, and Wilmington, as well as Duke University, East Carolina University, and Winston-Salem State University, received funding from the Advanced Education Nursing Traineeships Program to fund traineeships for nurses receiving advanced nursing education.

⁶ Kugler, Eileen. FRE Manager-Practice, North Carolina Board of Nursing. Written (email) communication, July 8, 2013 and July 15, 2013.

- The University of North Carolina at Chapel Hill and Duke University School of Nursing received \$195,000 and \$105,000 respectively to provide loan forgiveness for registered nurses completing graduate education to become nursing faculty.
- Duke University Hospital is part of the Centers for Medicaid and Medicare Services graduate nurse education demonstration project which will provide reimbursement (of up to approximately \$50 million over five years) for clinical training costs for advanced practice registered nursing students.

Physician Assistant Programs

The number and size of physician assistant programs across the state have also increased. Since the NCIOM report was released in 2007, Wake Forest University has increased its physician assistant program size by 16%, from 55 to 64 students. In addition, new physician assistant programs have been started or are planned at Campbell (2011), Elon (2013), UNC-CH (planned for 2014), St. Augustine's University (2014), Wingate, and High Point Universities, which will dramatically increase the number of PA graduates in the state. They will all be fully operational in 2014. In addition, Duke University School of Medicine's PA program received a 5-year federal ACA grant of \$1.3 million to expand its entering class size from 72 to 80 per class. Methodist University's PA program received a 5-year federal ACA grant of \$1.9 million to increase the class size from 34 to 40, with the possibility of expanding to 46 students in future years. Federal funding in both programs will be used to support financial aid for students who commit to enter primary care practice for at least five years following graduation. The UNC-CH School of Medicine's new physician assistant program will be targeted to veterans with the medical training and experience of a Special Forces Medical Sergeant. The Master of Physician Assistant Studies degree program will include clinical rotations throughout the state, as well as a rigorous classroom experience. Blue Cross Blue Shield of North Carolina has pledged \$1.2 million over the next four years to help UNC establish the master's curriculum, hire full-time program staff, and provide scholarship funds.

Clinical Rotations

As discussed in Recommendation 2.4, the increase in the number of medical students will increase the existing problem of a lack of clinical training sites for students. Similarly, PA, NP and CNM programs in North Carolina are in competition for preceptors (which are experienced health care providers who train and supervise students) with health professional programs from other disciplines and schools from other states (and at times, other countries), who pay preceptors more than the in-state programs do. This is a particular problem for the public colleges and universities who do not have the tuition resources to compete with private schools in paying community preceptors. AHEC has historically paid preceptors in primary care a modest sum for taking students, but the budget cuts of recent years combined with program growth, have placed serious limits on AHEC's capacity to maintain preceptor support. In addition, the lack of clinics or hospitals in rural and underserved communities willing and able to train NPs and PAs limits student exposure to these environments, making recruitment to these areas after graduation increasingly difficult.

Recommendation 2.8 (Priority Recommendation)**NOT IMPLEMENTED**

- a) **The North Carolina General Assembly should provide financial support to encourage or reward medical schools and other health professions schools that produce physicians, nurse practitioners (NPs), physician assistants (PAs), and certified nurse midwives (CNMs) who fill the unmet health needs of the state’s population. Incentives should be provided to increase the overall supply of health care providers, appropriately distribute physicians, NPs, PAs, and CNMs practicing in the state, and promote interdisciplinary training. Enhanced funding should be tied to outcomes that result in:**
- 1) increased numbers of physicians, NPs, PAs, and CNMs who set up and maintain practices in underserved areas;**
 - 2) increased numbers of physicians, NPs, PAs, and CNMs who obtain qualifications for and practice in primary care or other shortage specialties as identified by the Health Workforce Policy Board;**
 - 3) increased numbers of practicing physicians, NPs, PAs, and CNMs who are members of underrepresented minorities; or**
 - 4) greater interdisciplinary didactic and clinical team training among physicians, NPs, PAs, CNMs, nurses, and other health professionals (e.g., pharmacists, social workers, allied health workers).**
- b) **In order to determine the effectiveness of various training programs in meeting the health care workforce needs of North Carolina, the North Carolina General Assembly should amend North Carolina GS §143-613 to require medical schools, PA programs, NP programs, and CNM programs to report information on an annual basis to the Health Workforce Policy Board, the Board of Governors of the University of North Carolina, and the North Carolina General Assembly. Medical schools and NP, PA, and CNM programs shall cooperate with the Health Workforce Policy Board to identify on an annual basis the following data and information:**
- 1) number and location of graduates in active patient care practice and number of graduates no longer in active patient care practice by year of graduation;**
 - 2) percentage of graduates who enter residencies in primary care specialties or other specialties that are deemed as shortage areas in North Carolina as defined by the Health Workforce Policy Board;**
 - 3) percentage of graduates who practice in federally-designated health professional shortage areas in North Carolina and in areas specified as shortage areas by the Health Workforce Policy Board;**
 - 4) number and percentage of underrepresented minorities who are enrolled in and who graduate from these schools and programs and where they practice; and**
 - 5) number of graduates who have been involved in formalized interdisciplinary didactic or clinical training programs that involve students from multiple disciplines working together as teams in patient care.**

Financial Support

To date, the North Carolina General Assembly (NCGA) has not provided special funding to reward health professions schools in the state on the basis of whether the schools are producing the number and types of health care professionals needed to meet North Carolina’s health professional workforce needs. However, the NCGA does play a major role in the production of

the health care workforce by underwriting the cost of education. In 2010-2011, the state spent \$508 million to support medical education programs and students in the University of North Carolina system.ⁱ In addition, the state provided \$112 million to the North Carolina Community College System in 2011-2012 to support health professional education.ⁱⁱ Additionally, as discussed in Recommendation 2.6, the NCGA provides funding for North Carolina residents enrolled in medical school at either Duke University or Wake Forest University.

Monitoring and Current Supply Trends

North Carolina GS §143-613 requires health professional schools to report “the entry of State-supported graduates into primary care residencies and clinical training programs, and (ii) the specialty practices by a physician and each midlevel provider who were State-supported graduates as of a date five years after graduation” to the Board of Governors of The University of North Carolina each year by October 1. However, the statute has not been revised to require the additional information listed in this recommendation. There are other efforts to monitor the types of health professionals, what they practice, and where they practice by other groups in the state. The AHEC program monitors resident physicians trained in North Carolina by specialty and practice location in collaboration with researchers at the Cecil G. Sheps Center for Health Services Research at UNC-CH.⁶ Recent findings indicate that although physician supply trends are comparable to the rest of the country, distribution remains problematic. Overall, there is a perception that a shortage of physicians will arise with the demand for services as the population grows, ages, and has improved access to health insurance. Recent findings indicate that although physician supply trends are comparable to the rest of the country, distribution across geography and physician specialty remains problematic. Rural areas of the state suffer disproportionately from a lack of all types of physicians; they also suffer acutely from the shortage of specialists such as surgeons and psychiatrists. The North Carolina Office of Rural Health and Community Care also monitors provider supply distribution across the state looking specifically at health professional shortage areas.⁹ Recommendation 5.6 provides information about a tracking program AHEC has developed for all students participating in AHEC-sponsored health careers summer enrichment programs.

Admissions Criteria

Although North Carolina health professional training programs recognize the need for greater diversity within their programs and some focus on serving underserved populations, admissions criteria have not been modified to increase the percentage of underrepresented minorities or individuals interested in serving in rural and underserved areas of the state for most programs. Many programs receive so many applications for their limited slots that additional recruitment at this time is believed to be unnecessary. However, several programs in the state are working to provide additional scholarships to disadvantaged students to support this goal. For example, the Brody School of Medicine at East Carolina University (ECU) is making changes to increase the number of underrepresented minority physicians in the state. ECU recently announced an early assurance program with North Carolina Agricultural and Technical State University, which is the largest publicly funded historically black college in the state. The early assurance program will grant acceptance to qualifying undergraduate students before they have completed their degrees. These students will not be required to take the Medical College Admission Test (MCAT), and

will be able to begin medical school directly after successful completion of their undergraduate degree.

Increasing Providers Going into Shortage Specialties

In addition, some North Carolina schools have initiated programs across the state to increase the percentage of NPs and PAs who specialize in shortage specialties, including geriatrics and behavioral health. The PA program at Wake Forest University School of Medicine (WFU) has taken steps to improve the geriatric curriculum in the past two years. The WFU Geriatric Center has expressed strong interest in creating a geriatric fellowship for PAs, but inadequate funding continues to be an obstacle. The Duke University School of Nursing received \$262,000 in funding from the Patient Protection and Affordable Care Act (ACA) grants to train and educate those providing care for the elderly.

Interdisciplinary Training is discussed in Recommendation 2.2

Graduates Working in Underserved Areas

More than 30% of ECU graduates practice in underserved areas with 19% serving in rural areas of North Carolina.⁷ In ECU's 2013 class, 58% of those going on to medical residency programs are entering primary care.⁸ In UNC-CH's 2013 class, 52% of those going on to medical residency programs are entering primary care.⁹

Minority Representation

Over the past four years, between 20-30% of incoming medical students at ECU have been minority students.¹⁰ In 2011, approximately 22% of UNC-CH's incoming class were minority students. In 2012, 14% of Wake Forest School of Medicine's incoming class were minority students.¹¹ Twenty-two percent of Duke University School of Medicine's incoming Doctor of Medicine class in 2012-2013 were minority students.¹²

Across the state, there are many initiatives that are aimed at expanding the number of underrepresented minorities in health care professions, such as ECU's early assurance program with North Carolina Agricultural and Technical State University (discussed above). The ACA authorized many efforts to increase minority representation in various medical fields. However, most of these funds were not appropriated so they have not been implemented. One area that did get funding was nursing education. The University of North Carolina at Chapel Hill received \$210,000 through ACA grants to support efforts to increase nursing workforce diversity.

⁷ <http://www.dailytarheel.com/article/2012/10/nc-medical-schools-increase-enrollment>

⁸ <http://www.ecu.edu/cs-dhs/dhs/newsStory.cfm?ID=2693>

⁹ <http://www.med.unc.edu/ome/studentaffairs/residency-and-the-match/residency-placements/2013-residency-placement-by-specialty/view>

¹⁰ <http://www.ecu.edu/cs-dhs/bsomadmissions/profiles.cfm>

¹¹ <http://www.wakehealth.edu/School/Class-Profile.htm>

¹² Ellis, M. Associate Registrar, Duke University School of Medicine. Written (email) communication September 5, 2013.

In 2009 with funding from AHEC, the North Carolina Alliance for Health Professions Diversity—a collaboration of several institutions and agencies across the state—created a publication outlining pipeline programs across the state that target underrepresented minorities in the health professions¹¹. This document outlines approximately 50 programs available to students of various ages across the state to encourage and support interest in science and health care careers.

Several medical schools in North Carolina also have pre-medical education programs designed to increase the number of underrepresented minority health professionals. The UNC Schools of Medicine and Dentistry sponsor the Medical Education Development (MED) Program. This program offers a structured summer curriculum at a professional education level to increase the ability of advanced pre-professional candidates—especially those who are disadvantaged—to compete successfully for admission to health professional schools. Since 1974, 88% of the 2,288 students who have attended the MED summer program decided to apply to health profession schools. Of those, 90% gained admission, with 80% matriculating into medical or dental school, and the remainder entering other health profession schools.

In addition, the North Carolina AHEC program offers the Science Enrichment Preparation Program (SEP) every summer. Since the program began, more than 800 students have completed the program with 86% of those students actively engaged in a health science career.¹² East Carolina University's Brody School of Medicine also supports a summer program for students interested in attending medical school and strongly encourages minority or underserved students to apply.¹³ Wake Forest University's School of Medicine also runs a year-long program for qualifying underrepresented minority students to assist them with their core science knowledge and communication skills. Upon successful completion of the program, participants are offered acceptance into the School of Medicine.¹⁴

Recommendation 2.9 (Priority Recommendation)

NOT IMPLEMENTED

The North Carolina General Assembly should appropriate \$13 million in new funding and/or Medicaid GME funding to the North Carolina Area Health Education Centers (AHEC) Program to support additional and expanded clinical rotations for health science students and expansion of primary care or other residency programs that meet specialty shortages.

- a) \$3 million should be provided to develop new clinical training sites for students; to pay stipends to community preceptors who supervise and teach primary care students; and to provide housing, library, and other logistical support for students in community settings. Enhanced payments should be made to preceptors who practice in health professional shortage areas.**
- b) \$10 million should be provided to fund 100 new residency positions across the state targeted toward the high priority specialty areas of primary care, general surgery, and psychiatry or other specialty shortage areas identified by the Health Workforce Policy Board. This funding should be provided to AHEC, with AHEC then making grants to AHEC- and university-based residency programs that agree to expand residency slots and to create programs designed to graduate physicians likely to settle in rural and other underserved areas of the state.**

Following the release of the NCIOM Primary Care and Specialty Supply report, the University of North Carolina System General Administration created a task force to examine the need for new residency programs. The 2008-2009 General Medical Education Task Force analyzed health care needs in the state and recommended that 210 residency slots be created to meet these needs. However, the state has not appropriated new funding to support expansion of residency slots. In addition, the state has not appropriated new funding to AHEC to expand clinical training sites. Notably, \$5 million was eliminated from the AHEC budget in 2009, and an additional \$7.2 million was eliminated in 2011.

While new state funds have not been made available, new ACA federal funding is supporting minor expansion of two residency programs. The UNC Department of Pediatrics and UNC Hospitals received a 5-year grant of \$3.7 million to fund an increase of four pediatric residents per year. This funding will be used to train general pediatricians. Additionally, New Hanover Regional Medical Center/Southeast AHEC received a 5-year grant of \$1.8 million to expand the number of family medicine residents from 4 to 6 per year. The New Hanover Regional Medical Center will partner with the New Hanover Community Health Center, a federally qualified health center (FQHC), to serve as a second site for training residents.

New residency spots have been created at two other FQHCs in partnership with UNC. Blue Ridge Healthcare began offering rotation opportunities for 3rd and 4th year medical students in 2010. Today they have 22 residents in three training programs, family medicine, internal medicine and a traditional rotating internship. More recently, Piedmont Health and UNC launched the Family Medicine Residency Program, a partnership that will boost medical care in a rural part of Caswell County. Currently the program has two residents with plans for six by 2015.

As previously discussed, the lack of clinical training sites for students is a chronic problem that will only get worse with new programs being established and existing programs expanding enrollments (See the discussion on clinical rotations under Recommendation 2.7)

Recommendation 2.10 **PARTIALLY IMPLEMENTED**
North Carolina residency programs should consider seeking joint accreditation by the American Osteopathic Association along with existing accreditation by the Accreditation Council for Graduate Medical Education.

Two family medicine residency programs—New Hanover Regional Medical Center/Southeast AHEC and Southern Regional AHEC in Fayetteville—are now jointly accredited by the American Osteopathic Association and the Accreditation Council for Graduate Medical Education. No additional residency programs in the state have attempted to seek joint accreditation.

Recommendation 2.11 **PARTIALLY IMPLEMENTED**

The North Carolina Office of Rural Health and Community Care in collaboration with the Community Practitioner Program of the North Carolina Medical Society, North Carolina Area Health Education Centers Program, and professional medical societies should conduct marketing and outreach campaigns that emphasize positive aspects of health care practice in North Carolina.

Organizations across the state are successfully marketing positive aspects of practicing health care in North Carolina. The North Carolina Office of Rural Health and Community Care (ORHCC) operates an extensive physician recruitment program that promotes North Carolina as a good place to live and practice medicine. ORHCC utilizes a federal grant to continue to display practice opportunities in rural and underserved communities at in-state residencies as well as national conferences. One example of marketing the ORHCC may utilize in the future is use of social media such as Facebook and Twitter.

The Community Practitioner Program (CPP) of the North Carolina Medical Society Foundation has worked collaboratively with the ORHCC and other state organizations to streamline marketing and outreach campaigns in the state. The program also created a system that records retention, as well as the positive and negative aspects of practicing in the state. The goal is to use this information to further enhance the practice environment to improve physician retention.

Recommendation 2.12 **PARTIALLY IMPLEMENTED**

The North Carolina General Assembly should help maintain and improve the positive regulatory environment for all licensed health professionals including physicians, nurse practitioners, physician assistants, and certified nurse midwives.

The North Carolina General Assembly passed a tort reform law in the 2011 session that is viewed as providing a more favorable regulatory environment for physicians. The amendments in the 2011 act limit the amount of noneconomic damages to \$500,000 (unless the defendant acted in reckless disregard for the rights of others, was grossly negligent, fraudulent, intentional, or acted with malice) and shorten the time period to initiate malpractice suits on behalf of minors.¹³ There are current legislative efforts to improve the regulatory environment for nurses that have not successfully passed as laws.

Recommendation 2.13 **FULLY IMPLEMENTED**

The North Carolina Midwifery Joint Committee should follow licensure reentry procedures established by the American College of Nurse-Midwives to enable inactive practitioners otherwise in good standing to reenter practice.

At this time, inactive nurse midwives in otherwise good standing are allowed to re-enter practice in North Carolina. To support the re-entry of these health professionals, East Carolina University

¹³ Session Law 2011-400. Senate Bill 33. <http://www.ncleg.net/Sessions/2011/Bills/Senate/PDF/S33v7.pdf>.

has created a “re-entry into practice” course for interested inactive nurse midwives. Several students have successfully taken the course as non-degree seeking students.

Recommendation 2.14 (Priority Recommendation) PARTIALLY IMPLEMENTED

In order to improve practice management across the state:

- a) The University of North Carolina system, North Carolina community colleges, and North Carolina independent colleges and universities should offer courses that will increase the supply of practice managers across the state, particularly in underserved areas, and improve the skills of existing practice managers.**
- b) The North Carolina Area Health Education Centers Program, North Carolina Office of Rural Health and Community Care, Community Practitioner Program, North Carolina community colleges, and North Carolina independent colleges and universities should develop a continuing education curriculum for existing practitioners and staff to enhance the business skills needed to maintain a viable practice.**
- c) North Carolina foundations should consider funding start-up programs to community colleges and other organizations to enhance the skills of practice managers and providers and programs targeted to underserved areas.**

East Carolina University has developed a program in collaboration with North Carolina Community Health Centers to improve the skills of practice managers who work in federally qualified health centers.

North Carolina Area Health Education Centers (AHEC) also developed a leadership and management curriculum at the request of CCNC. This program, targeted to senior managers in the CCNC networks, was initiated in the fall of 2010 and was completed in the fall of 2011. The AHECs also offer numerous continuing education programs on management topics throughout the year for practice managers, clinicians, and hospital managers. The Mountain AHEC’s Basic Management Institute has been in operation for over 12 years.

North Carolina Area Health Education Centers (AHEC)¹⁴, in partnership with CCNC and North Carolina Healthcare Quality Alliance, has provided AHEC practice-based services throughout the state. The practice-based consultations help practices learn to intertwine data systems with quality improvement.

In addition, Pitt County Community College has been designated as the lead community college in the southeast region of the country to educate health information technology (HIT) professionals. PCC offers an HIT Associate Degree program and a federally-funded six-month HIT Workforce Training Program. The Associate Degree program curriculum provides individuals with the knowledge and skills to process, analyze, abstract, compile, maintain, manage, and report health information. Classes are offered online, with the exception of required science classes, and a required professional practice experience. The Workforce Training Program is an intensive, online, six-month non-degree education designed to train existing medical and information technology professionals with the knowledge and skills needed to “help

¹⁴ More information about AHEC is available at <http://www.ncahec.net/>

their practices adopt electronic health records, conduct information exchange across health care providers and public health authorities, and redesign workflows within health care settings to gain the quality and efficiency benefits of EHRs, while maintaining privacy and security of medical information.¹⁵”

MALDISTRIBUTION

Recommendation 3.1

PARTIALLY IMPLEMENTED

The North Carolina Department of Public Instruction, North Carolina Community College System, University of North Carolina, North Carolina Area Health Education Centers Program, and other related programs should collaborate to create more intensive programs and to coordinate and expand existing health professions pipeline programs so underrepresented minority and rural students likely to enter health careers are offered continued opportunities for enrichment programs in middle school, high school, and college and then receive continued support in medical and other health professions schools.

Several agencies across the state are working collaboratively to coordinate pipeline programs for underrepresented minority students at the pre-college and university levels. During the winter of 2007, the AHEC Program and Winston Salem State University, in collaboration with the community college and university systems, academic medical centers, and a number of other organizations, hosted a summit on diversity in the health professions and health disparities. As a result of that summit, the participating organizations have worked over the past five years to create the North Carolina Alliance for Health Professions Diversity. The goal of this group is to establish a more formal alliance of health professions education programs in the state and other state agencies with the goal of strengthening program coordination and improving the effectiveness of these programs. The group received some funding from AHEC to complete a strategic plan, but has not become a formal organization due in part to the budget challenges of the past four years. In August of 2012 the collaborating organizations held a second statewide conference to highlight best practices in health professions diversity programs and to plan future initiatives to increase minority representation in the health professions.

Recommendation 3.2

PARTIALLY IMPLEMENTED

The Duke University School of Medicine, Brody School of Medicine at East Carolina University, University of North Carolina at Chapel Hill School of Medicine, Wake Forest University School of Medicine, and North Carolina residency programs should create targeted programs and modify admission policies to increase the number of students and residents with expressed interest in serving underserved populations and/or practicing in rural areas of North Carolina. Targeted programs should be designed to provide intensive and longitudinal educational and clinical opportunities to practice with medically underserved populations in medically underserved areas of the state.

¹⁵ <http://www.pittcc.edu/academics/programs/health-sciences/health-information-technology/workforce-training-program/>

Although medical schools across the state recognize the need to support students who express an interest in working with underserved populations, most have not modified admission policies or targeted programs to assist in admission for these students. See Recommendation 2.8 for more discussion of ECU’s admissions policies to meet these goals.

The North Carolina Academy of Family Physicians (NCAFP) is partnering with Blue Cross and Blue Shield of North Carolina (NC) to undertake a six-year project to increase interest in family medicine among North Carolina medical students. The NCAFP will name up to twelve family medicine scholars during their first year of medical school. These scholars will then receive benefits throughout their medical education, including intensive mentorship with a practicing family physician. The scholars will also receive a scholarship at the end of medical school if they enter a family medicine residency. In addition, the NCAFP has a scholarship program of \$4,000 per year for selected students interested in family medicine, as well as an externship program in family medicine for medical students during the summer between their first and second years of medical school. Within all of these programs, some of the preceptors/mentors are practicing clinicians in underserved areas, which serves to encourage students to practice in these areas.

The UNC School of Medicine and the Sarah Graham Kenan Rural and Underserved Medical Scholars Program and the Mountain Area Health Education Center family medicine residency program have partnered to create a program for medical students interested in rural health. The program places residents in a six-week summer internship working in a rural family practice.

Residency expansions are discussed in Recommendation 2.9.

Rec. 3.3. (Priority Recommendation) NOT IMPLEMENTED

The North Carolina General Assembly should appropriate \$1,915,600 to the North Carolina Office of Rural Health and Community Care (ORHCC). Of this amount:

- a) \$350,000 should be appropriated to provide technical assistance to communities to help identify community needs and practice models that can best meet these needs and to provide technical assistance to small practices or solo practitioners practicing in medically underserved communities or serving underserved populations;**
- b) \$1.5 million should be appropriated to pay for loan repayment and financial incentives to recruit and retain physicians, physician assistants, nurse practitioners, and certified nurse midwives to rural and underserved communities; and**
- c) \$65,600 should be appropriated to expand the number of ORHCC staff who recruit practitioners into health professional shortage areas.**

ORHCC should place a special emphasis on recruiting and retaining underrepresented minority, bilingual, and bicultural providers to work in underserved areas or with underserved populations.

Although ORHCC continues to recruit underrepresented minorities as well as bilingual and bicultural providers, there have been no additional funds appropriated by the state.

Technical Assistance

The ORHCC continues to provide technical assistance to small practices and solo practices, however, no additional funding has been appropriated.

Loan Repayment and Financial Incentives

The ORHCC identifies potential providers to recruit to underserved areas in the state. In FY 2012-2013, ORHCC recruited 160 primary care physicians, psychiatrists and dentists (with an average of 150 in prior years) to underserved areas of the state.¹⁶ As of September 2013, all appropriations for recruitment and loan repayment have been exhausted for SFY 2014, thus underscoring the need for additional recurring funds. In addition to increased appropriations, ORHCC would like to expand the type of provider who can qualify for incentives to include general surgeons in rural and critical access hospitals.¹⁷

In 2009, ORHCC's provider incentive funding was reduced by \$2 million and by another \$1 million in 2010. No expansion funding has been appropriated to the ORHCC for loan repayment. Since 2009, recurring funds have been reduced by 57% to a total of \$1.5 million. While ORHCC lost state funding to support provider recruitment, there are new federal funds available to expand the National Health Service Corps (NHSC). The ACA authorized \$4.0 billion over six years to the NHSC with annual adjustments to the authorization thereafter.⁹ However, the increase in ACA funds corresponds with reduction in NHSC recurring funds. While federal loan repayment programs through the ACA and NHSC do offer provider incentives, loan repayment through NHSC is much more difficult now, requiring a HPSA score of 14 or higher for primary care loan repayment, thus eliminating a number of NC HPSA counties from the program.

ORHCC Staff to Recruit Practitioners

ORHCC has identified federal funds from the Health Resources and Services Administration (HRSA) Primary Care Offices grant to allow ORHCC to hire an additional person for recruitment, and also to assist with shortage designation.

Bilingual Providers

ORHCC has worked in the past to recruit bilingual providers. However the ORHCC no longer continues to offer additional state loan repayment for bilingual providers.

Recommendation 3.4 (Priority Recommendation) PARTIALLY IMPLEMENTED
North Carolina foundations should fund regional, multi-county demonstrations to test new models of care to serve patients in rural and urban underserved areas.

¹⁶ http://www.ncdhhs.gov/pressrel/2013/2013-07-17_record_primarycare_rural_nc.htm

¹⁷ Collins, Chris. Acting Director, Office of Rural Health and Community Care. Written (email) communication, September 20, 2013.

- a) **New models should be developed collaboratively between the North Carolina Office of Rural Health and Community Care, North Carolina Area Health Education Centers Program, health care systems, medical schools, other health professions training programs, licensure boards, and other appropriate groups and should be designed to test new models of care that focus on integration of care, management of chronic illness, and prevention. Such models should emphasize the creation of medical homes and interdisciplinary practice environments to enhance care to underserved populations.**
- b) **New models should be evaluated to determine if they improve access, quality of care, and/or efficiency.**

The State Health Plan, Division of Medical Assistance, and private insurers should modify reimbursement policies to support the long-term viability of successful models of care for underserved populations.

Many of the innovative practices that have shown success over the past five years in North Carolina are described in Recommendation 2.2. Additional information on new models of care that have been or are being tested in North Carolina can be found in Appendix H of the North Carolina Institute of Medicine’s *Examining the Impact of the Patient Protection and Affordable Care Act in North Carolina*, released in 2013 (available online at <http://www.nciom.org/publications/?examining-the-impact-of-the-patient-protection-and-affordable-care-act-in-north-carolina>).

Recommendation 3.5 (Priority Recommendation) NOT IMPLEMENTED

The North Carolina General Assembly should explore financial incentives or other systems to encourage providers to establish and remain in practice in underserved areas or with underserved populations. Financial incentives may include, but not be limited to, tax credits or increased reimbursement. Other strategies to encourage providers to locate and practice in underserved areas or with underserved communities may include, but not be limited to, help with call coverage or use of hospitalists.

The North Carolina General Assembly has not yet taken any action on this issue.

PRIMARY CARE AND PROVIDER SPECIALTIES

Recommendation 4.1 (Priority Recommendation) PARTIALLY IMPLEMENTED

- a) **The State Health Plan, Division of Medical Assistance, and private insurers should enhance payments to primary care providers to recognize the value of diagnostic and cognitive skills, particularly those payments that incentivize primary care providers to create comprehensive primary care homes that include lifestyle interventions, preventive health services, chronic disease management, and case management through use of case managers.**
- b) **Reimbursement levels for primary care services through Medicaid, North Carolina Health Choice, State Health Plan, and private insurers should be continually evaluated**

to ensure they are adequate to meet the costs of care across the state, particularly in underserved areas.

As the largest private insurer in the state, Blue Cross Blue Shield of North Carolina (BCBSNC) has made a concerted effort to enhance reimbursement to primary care providers through the Blue Quality program. Begun in October of 2009, the program allows primary care physicians whose practices meet qualifications of a patient-centered medical home to receive higher reimbursement levels in return for signing a voluntary contract with BCBSNC. The insurer has also created virtual case managers, associated with specific practices, to provide case management and health coaching to insured patients at those practices. The North Carolina State Health Plan also supports case management services for individuals across the state.

Reimbursement levels have not been modified by any insurer in the state to reflect the increased needs of medically underserved areas. However, provisions from the ACA increased Medicare payments to general surgeons practicing in health professional shortage areas (Sec. 5501). In addition, Medicare payments have been increased by 10% for primary care services. In 2013-2014, the ACA requires states to pay Medicaid providers 100% of the Medicare rates paid for primary care services. (Sec. 1202 of Health Care and Education Reconciliation Act).

New proposed federal regulations have been promulgated to create a process for states to assure that Medicaid payments “are consistent with efficiency, economy, and quality of care and are sufficient to enlist enough practitioners so that care and service are available under the plan at least to the extent that such care and services are available to the general population in the geographic area.”ⁱⁱⁱ Once the regulations are finalized, states will be required to monitor access to care and, if needed, take action to ensure adequate access.

Recommendation 4.2

NOT IMPLEMENTED

The North Carolina OB/GYN Society, North Carolina Area Health Education Centers Program, East Carolina University Nurse Midwifery program, North Carolina Academy of Family Physicians, and North Carolina medical schools should change the practice environment to encourage acceptance of certified nurse midwives into practice.

Although no additional action has been taken to further change the practice environment, AHEC, medical schools, and residency programs all employ certified nurse midwives to care for patients and to teach medical students and residents. However, acceptance of CNMs has not progressed uniformly across the state. There are still community hospitals in the state that do not provide privileges to CNMs.

Recommendation 4.3

FULLY IMPLEMENTED

The North Carolina General Assembly should appropriate \$206,000 annually to expand the East Carolina University Nurse Midwifery program by 30%.

Although, no funds have been appropriated by the North Carolina General Assembly to expand the ECU Nurse Midwifery program, the program has doubled in size from 8 to 16 since 2007.

Recommendation 4.4 (Priority Recommendation)**NOT IMPLEMENTED**

The North Carolina General Assembly should appropriate \$2 million to provide malpractice premium subsidies (similar to the Rural Obstetrical Care Incentive Program) for physicians and certified nurse midwives who provide delivery services in medically underserved areas.

This recommendation has not been implemented.

Recommendation 4.5**PARTIALLY IMPLEMENTED**

North Carolina medical schools and other health professions programs, specialty societies, and the North Carolina Area Health Education Centers Program should strengthen and expand the mental and behavioral health and psychopharmacology components of training and continuing education to increase competencies in mental and behavioral health care for all graduates, with a special emphasis in integrating behavioral health and primary care. Innovative approaches may include special tracks in psychology/behavioral health, better integration of behavioral health content into current curricula, postgraduate programs in behavioral health, and education for psychiatrists and other mental health professionals in working collaboratively with primary care professionals in more integrated models of care.

The ICARE collaboration provides primary support to implement this recommendation. (For background information on ICARE, see Recommendation 2.2.) ICARE was initially developed to improve the coordination of care between primary care providers and mental health professionals. Since its inception, ICARE has supported efforts to train primary care providers to provide better management of people with depression, created stronger linkages between primary care practices and local management entities/managed care organizations (LME/MCOs), and helped support the co-location of behavioral health specialists in primary care settings (and reverse co-location where primary care providers are placed in mental health practices). To date, most of the work has focused on coordination of care around mental health issues, but ICARE also supports efforts to improve coordination of care for people with substance abuse disorders and people with intellectual and other developmental disabilities. The ICARE website (<http://www.icarenc.org/>) is a repository of learning tools, county-by-county resources, and models for integrated care across the state.

The successful integration of behavioral health into primary care practices has allowed many primary care practices to continue to provide behavioral health services even though funding for the project is no longer provided. However, co-location of mental health professionals in primary care practices is difficult outside of a pediatric practice. That is because there is no ready source of funding to support mental health services for uninsured adults (whereas, most children—including low-income children—have a source of insurance coverage). This model may be financially more feasible beginning in 2014, with the expansion of private insurance coverage to more adults through the ACA, and mental health and substance abuse parity.

Every medical school in North Carolina incorporates behavioral health and psychopharmacology education in their medical school curriculum. However, the curriculum is not uniform between institutions. At Duke University's School of Medicine, some educational programs on these topics have been offered in a primary care continuing medical education series. Duke has also worked to create a mid-level workforce in psychiatry by providing PAs with a post-graduate fellowship in psychiatry. East Carolina University's Brody School of Medicine provides extensive training in behavioral health and psychopharmacology during the first, second, and third years of medical schools. In the first two years, medical students have integrated care coursework that covers topics in behavioral medicine, human sexuality and substance abuse. In their third year, students shadow behavioral health consultants as part of their family medicine rotation.

AHEC offers a large number of continuing education programs each year on mental health and behavioral health topics. Attendance at these programs exceeded 26,700 in 2010. Many of these programs include an integrated care component. Southern Regional AHEC provided leadership to the educational initiatives of the ICARE Project and remains very actively engaged in educating providers on integrated care. A grant to Southern Regional AHEC from The Duke Endowment funds this AHEC to partner with Duke's PA and NP programs to offer a major series of continuing education programs for PAs and advanced practice nurses on topics related to behavioral health and integrated care.

Recommendation 4.6 (Priority Recommendation)

PARTIALLY IMPLEMENTED

The North Carolina General Assembly and North Carolina Division of Mental Health, Developmental Disabilities and Substance Abuse Services, should provide funding to targeted rural communities to establish new models of care to serve public patients in rural and underserved communities.

- a) New models of care should be developed collaboratively with the North Carolina Division of Mental Health, Developmental Disabilities and Substance Abuse Services, North Carolina Area Health Education Centers Program, North Carolina Office of Rural Health and Community Care, academic health care institutions, and primary care and specialty societies.**
- b) Models should include psychiatrists and other mental health professionals and have close linkages to primary care providers in the service area.**
- c) To improve the professional environment in these settings, these sites should qualify for higher levels of reimbursement, have strong linkages to academic health centers, and have a strong focus on integrated care.**

Within the Division of Mental Health, Developmental Disabilities and Substance Abuse Services of the North Carolina Department of Health and Human Services, funding for new models of care has focused on walk-in clinics, mobile crisis teams, and increasing the number of beds for mental health services across the state. Seventy walk-in clinics that also provide crisis services have been supported across the state. In addition, North Carolina Systemic, Therapeutic Assessment, Respite and Treatment (North Carolina START), which is a crisis team for people with intellectual and other developmental disabilities, received state funding.¹⁰ There are six

North Carolina START teams in the state, with two covering each of the North Carolina's three regions. In addition, the North Carolina General Assembly has enacted legislation that will change the structure and management of Local Management Entities (LMEs) (Session Law 2011-264). Beginning July 2012, no LME can serve a population of less than 300,000 people, and by July 2013, no LME can serve a population of less than 500,000 people. In addition, LMEs will become managed behavioral health centers, receiving capitation payments to provide services and supports to people with mental illness, substance abuse disorders, and intellectual and other developmental disabilities. This new legislation will require that smaller counties band together to provide managed behavioral health services in order to meet the population size limits.

The Division of Mental Health, Developmental Disabilities and Substance Abuse Services of the North Carolina Department of Health and Human Services has also been active in this arena. Specifically, the agency is implementing a clozapine pilot project. Clozapine is an effective antipsychotic drug, but is often avoided by community providers due to the potential side effects, paperwork required to place a patient on the medication, and the need for continual lab monitoring. This project aims to create clozapine clinics across the state where the blood tests and patient registry paperwork are completed, so that providers can more easily prescribe this medication. Currently, the model clinic for this project is located in Asheville.

Recommendation 4.7 (Priority Recommendation) PARTIALLY IMPLEMENTED
The North Carolina General Assembly, public and private insurers, and payers (including, but not limited, to the State Health Plan, North Carolina Division of Medical Assistance, and North Carolina Division of Mental Health, Developmental Disabilities and Substance Abuse Services) should pay for:

- a) **Psychiatric consultations for primary care providers and other clinicians either through face-to-face consultations or telemedicine; and**
- b) **Services provided by primary care providers to patients who have been diagnosed with a psychiatric diagnosis.**

Reimbursement levels for mental and behavioral health services through Medicaid, North Carolina Health Choice, State Health Plan, and other payers should be continually evaluated to ensure they are adequate to meet the costs of care across the state, particularly in underserved areas.

Most insurers in the state pay for face-to-face psychiatric consultations and services for primary care providers. However, all insurers do not cover other types of visits such as telepsychiatry visits, although some do. Medicaid clinical coverage policy does cover telemedicine and telepsychiatry, defined as “the use of two-way real-time interactive audio and video between places of lesser and greater [medical and psychiatric capabilities] or expertise to provide and support health/psychiatric care when distance separates participants who are in different geographical locations.”¹⁸

¹⁸ <http://www.ncdhhs.gov/dma/mp/1H.pdf>

Across the state, there are many initiatives that are aimed at expanding the number of underrepresented minorities in health care professions, such as ECU's early assurance program with North Carolina Agricultural and Technical State University (discussed above).

See recommendation 2.8 for more details on efforts to increase the number of underrepresented minority health professionals.

Recommendation 5.2 (Priority Recommendation) **PARTIALLY IMPLEMENTED**

- a) **North Carolina medical and other health professions schools including university and community college programs should:**
- 1) **recruit and admit more bilingual and bicultural students into health professions classes;**
 - 2) **offer and encourage students to take Spanish medical language courses as part of health professions training;**
 - 3) **develop innovative programs to prepare more bilingual and bicultural graduates; and**
 - 4) **build cultural sensitivity training into curricula.**
- b) **North Carolina foundations should create through a competitive process a Center for Excellence to inventory, evaluate, and disseminate best practices in health care professional programs.**

Although medical and other health profession schools across the state acknowledge the importance of including bilingual and bicultural individuals in their student population, there is no structured effort to recruit and admit these students into health professions programs in the state at this time.

North Carolina medical schools encourage students to take Spanish medical language courses as part of health professions training. For example, the UNC School of Medicine offers a course titled Comprehensive Advanced Medical Program of Spanish (CAMPOS).¹⁵ CAMPOS is an intensive curriculum for students interested in being bilingual in both Spanish and English when they graduate. The program involves an immersion experience and works to place students in bilingual practices as part of the student's clinical experience.

Recommendation 5.3 **NOT IMPLEMENTED**

The North Carolina Area Health Education Centers Program should work collaboratively with key partners including the Center for New North Carolinians and the Office of Minority Health and Health Disparities to:

- a) **expand existing Spanish language programs to train more interpreters and practicing health professionals; and**
- b) **expand cultural competency and cultural sensitivity training for all health professionals.**

In collaboration with the Center for New North Carolinians and North Carolina Department of Health and Human Services' Office of Minority Health, AHECs have continued to offer

interpreter training and cultural sensitivity training for health professionals. More needs to be done, however, to ensure a qualified bilingual health care workforce. The number of requests for Spanish language trainings has decreased substantially in the recent past. There has also been a slight decrease in the request for cultural competency and cultural sensitivity training, although trainings in this area are still being offered on a regular basis by the AHECs.

Recommendation 5.4 **NOT IMPLEMENTED**

The North Carolina General Assembly should create a grants program to incentivize medical schools and other health professions training programs to produce more bilingual and bicultural health care professionals.

At this time, the North Carolina General Assembly has not created a grants program to incentivize the training of more bilingual and bicultural health care professionals.

Recommendation 5.5 **PARTIALLY IMPLEMENTED**

The North Carolina Community College System should place greater emphasis on recruiting and training bilingual and bicultural medical office staff, nurses, and allied health professionals.

The North Carolina Community College System (NCCCS) has worked to place a greater emphasis on recruiting and training bilingual and bicultural health professionals. Currently, a variety of degree and non-degree courses are offered to train individuals to communicate in more than one language to the public. In 2010, a program titled *Healthcare Interpreting* (as mentioned in the discussion for recommendation 5.2) was approved by the State Board of Community Colleges. This program prepares individuals proficient in English and a target language to work in a health care environment as entry-level bilingual professionals to provide communication access to care and services to those whose language of preference is other than English. Davidson County Community College offers the Healthcare Interpreting Program. During the 2012-2013 school year, there were six students enrolled in this program. Additionally, the community college system developed a course on transcultural healthcare that aims to teach students to provide culturally competent healthcare to individuals, families, groups, communities and institutions. The course has been taught to more than 280 people at three community colleges.

Recommendation 5.6 (Priority Recommendation)

NOT IMPLEMENTED

The North Carolina Area Health Education Centers (AHEC) Program should work collaboratively with key partners to explore issues that need to be addressed in creating a statewide, uniform student tracking and evaluation system of federal and state funded programs across the educational pipeline. AHEC should report findings back to the Health Workforce Policy Board. The goal of this report should be to determine how best to:

- a) evaluate existing minority health professions pipeline programs and expand the most successful programs, particularly those with a focus on intensive, longitudinal programs that work with small numbers of students over a longer period of time.**
- b) develop a statewide, uniform student tracking and evaluation system and program inventory of formal and informal programs across the educational pipeline which is shared by precollege and university health career advisors and counselors.**

Future state funding should be tied to programs that are found to be the most successful in increasing underrepresented minorities in health professions.

See Recommendation 2.8 for details of current efforts to monitor and track students in the state's health professional programs.

AHEC has developed a tracking program called HC-SETS which tracks all students participating in AHEC-sponsored health careers summer enrichment programs. This program is quite robust, but has not been linked to other databases in the state that track student progress. The current economic climate has prevented the creation of a statewide, uniform student tracking and evaluation system of pipeline programs in the state.

Recommendation 5.7

NOT IMPLEMENTED

The Office of Rural Health and Community Care in collaboration with minority professional associations, such as Old North State Medical Society and other key partners, should provide practice support to underrepresented minority health professionals who choose to practice in underserved areas. Support can include, but not be limited to, creation of community mentoring programs or other strategies to support retention of underrepresented minorities in underserved areas.

Although professional organizations such as the Old North State Medical Society and the ORHCC express continued interest in supporting minority health professionals who practice in underserved areas, there has not been a concerted effort to do this due to lack of funding.

ⁱ Harb, D. Fiscal Research Division, North Carolina General Assembly. Written (email) communication. February 2, 2012.

ⁱⁱ Harb, D. Fiscal Research Division, North Carolina General Assembly. Written (email) communication. February 2, 2012.

ⁱⁱⁱ Centers for Medicare and Medicaid Services. United States Department of Health and Human Services. Medicaid program; methods for assuring access to covered Medicaid services. *Federal Register*. 2011;76(88):26342-26362.