Provider Supply

Chapter 8

Ensuring that everyone has health insurance coverage will not, in itself, guarantee that everyone has access to health services. The state must also ensure that there is an adequate supply of health care professionals, including physicians, nurse practitioners (NPs), physician assistants (PAs), dentists, nurses, pharmacists, health educators, and other allied health professionals to meet the health care needs of the state. Unfortunately, North Carolina—like the rest of the country—is likely to experience a significant provider shortage in the next 10-20 years.[1-4] The Health Access Study Group could not thoroughly examine all health professional workforce issues in the short amount of time it had to examine access issues. Because of the time constraints, the study group focused on the trends in physician, NP, and PA supply.

North Carolina needs an adequate supply of physicians, nurse practitioners, and physician assistants to provide the preventive, primary care, and specialty services needed to maintain and improve health.

North Carolina needs an adequate supply of physicians, nurse practitioners, and physician assistants to provide the preventive, primary care, and specialty services needed to maintain and improve health. There have been numerous studies showing the relationship between access to health services and health outcomes.[5-7] As noted in Chapter 2, those without health insurance coverage have more access problems, and as a result, their health suffers. Providing health insurance coverage will remove or minimize financial barriers that prevent people from receiving necessary care. But without an adequate workforce, the health care needs of both those with insurance and those who remain uninsured will suffer.

Physicians are the leaders of the health care team. Because of their extensive education and training, they are best able to handle complex health problems. However, NPs, PAs, nurses, dentists, pharmacists, public health professionals, and other allied health professionals are also critically important. Each of these professionals helps contribute to the overall well being of the state's population. In the past, many of these health professionals have worked separately in silos—but greater interdisciplinary practice is going to be needed in the future with the growing prevalence of chronic illnesses and complex and comorbid health conditions.

While the number of *newly* licensed physicians, NPs, and PAs is expected to increase over the next 20 years, the growth is not likely to keep pace with the increased demand for health services. In addition, North Carolina is likely to lose a significant proportion of the workforce due to retirement.[1] The health professional workforce is aging, with a large cohort approaching retirement age. In 2004, 68% of North Carolina physicians were age 40 or older. On average, physicians have historically retired around age 66. Assuming that this does not change, a large proportion of the physician workforce will likely retire within the next 20 years. Similarly, 68% of NPs and 51% of PAs were age 40 or older in 2004. The net growth in health care professionals is unlikely to meet the increased demand for services over the next 20 years.

Demand for health services is driven by many factors—most noticeably the growth in the population, aging of the population, and increased number of people living

with chronic illnesses.[a,4] The population is expected to grow 17.6% in North Carolina between July 2007 and July 2020, and another 11.7% by 2030. In addition, the proportion of the population age 65 or older is expected to grow 33.7% between July 2007 and July 2020.[8] Older people generally use more health care services (measured in annual visits) than do younger individuals. For example, people ages 65-74 had an average of 6.2 visits in 2004, whereas younger adults, ages 25-44, had an average of 2.4 visits.[9] Together, the growth and aging of the population is expected to increase demand (measured in annual visits) by 34% between 2004 and 2020.[1] Continued increases in the prevalence of chronic diseases will also increase demand for health care services. In addition, providing people with health insurance coverage may increase demand, as people without health insurance coverage generally use one-half to two-thirds the services of those with coverage.[10] What is unknown is the extent to which increased coverage (and related prevention activities) will affect subsequent demand.

Together, the growth and aging of the population is expected to increase demand (measured in annual visits) by 34% between 2004 and 2020.

The North Carolina Institute of Medicine studied the adequacy of the North Carolina primary care and specialty supply in 2006-2007.[1] The Task Force found that absent major changes in the supply of health professionals, North Carolina was projected to experience a 12% decline in *per capita* physician supply by 2020 and a 26% decline by 2030 (measured as a ratio of physicians to population). (See Table 8.1.) Even under the best scenario, including continued rapid growth in the supply of nurse practitioners (NPs), physician assistants (PAs), and certified nurse midwives

Table 8.1
Projected Decrease in Provider-to-Population Ratios, North Carolina 2020 and 2030

	Projected Change in Provider-to-Adjusted Population Ratios*	
	2020	2030
Physicians only	-12%	-26%
All providers		
Best case**	-1%	-8%
Worst case***	-8%	-19%

Source: North Carolina Institute of Medicine Task Force on Primary Care and Specialty Supply. Providers in Demand: North Carolina's Primary Care and Specialty Supply. North Carolina Institute of Medicine. Durham, NC. June 2007.

* The population figures are weighted to reflect the increased demand for services projected from the aging of the population.

** Best case scenarios are based on the current growth of physicians and the higher than aver age rate of growth of NPs, PAs, and CNMs. The projections weigh non-physician clinicians at .75 full time equivalent (FTE) of a physician.

*** Worst case scenarios are based on the current growth of physicians and the average rate of growth of non-physician clinicians over the last 25 years. Non-physician clinicians are weighted at 0.5 FTE of a physician.

a North Carolina's population is expected to grow 39% by 2029, with the population of adults age 65 or older to grow by 107%. The growth of this demographic is particularly consequential, as those over 65 years of age make twice as many hospital visits as those under 65 due to higher prevalence of major illnesses and chronic diseases.

(CNMs), North Carolina is still projected to experience a 1% (2020) to 8% (2030) decline in practitioners. This does not factor in the increased demand that might occur with increased health insurance coverage. The impact of this practitioner shortage will be felt first and most strongly by underserved communities and in less attractive specialties.[4]

North Carolina should take a proactive approach to address this looming workforce shortage. First, the state should increase the production of new physicians and other non-physician clinicians. We cannot afford to wait, as it takes many years to produce new health care professionals. Second, North Carolina should expand its recruitment and retention efforts, specifically those targeted to expanding the supply of providers in underserved areas. Third, North Carolina should continue to explore new ways of delivering care to improve population health, so that we can more effectively meet the state's health care needs. These options are not mutually exclusive. North Carolina can work to increase the number of students who graduate from medical, NP, or PA programs, while at the same time increasing residency slots, expanding recruitment and retention efforts, and exploring new options to provide services more efficiently. However, it is not enough to increase the raw *numbers* of health professionals practicing in the state. North Carolina also needs to ensure that we produce and/or recruit the types of health care professionals we need (i.e. primary care providers and different *types* of specialists, and underrepresented minorities) and that they practice in *areas of the state* where they are most needed. This is particularly true if the state invests new dollars into increasing supply of health care professionals. Given limited state funds, the North Carolina General Assembly should ensure that any new monies invested in health professional training, recruitment, or retention strategies are designed to meet the health care needs of the state.

This chapter briefly describes the challenges the state faces in producing both the types of health professionals needed, and in ensuring that they are adequately distributed throughout the state. The chapter then covers health professional training and residency programs, and past efforts to recruit and retain health professionals in health professional shortage areas.

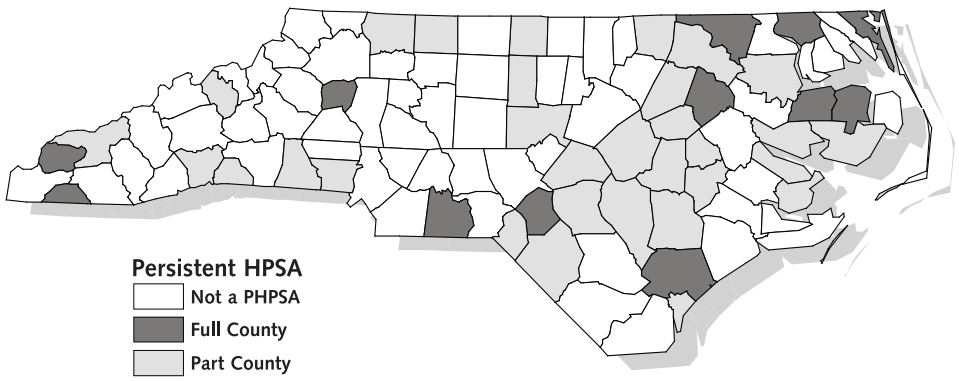
Even under the best scenario, including continued rapid growth in the supply of nurse practitioners, physician assistants, and certified nurse midwives, North Carolina is still projected to experience an 8% (by 2030) decline in practitioners.

Maldistribution of Health Care Professionals

The shortage of health professionals is not merely a theoretical problem that we will face in the future. Some areas of the state are already experiencing provider shortages, forcing residents to travel long distances for health care. Health care professionals tend to congregate around academic centers or major hospitals. In contrast, rural areas or low-income parts of urban communities are more likely to experience shortages. In 2008, there were 11 full counties and 49 part-counties in North Carolina that were considered primary care health professional shortage areas (HPSAs).[11] The US Department of Health and Human Services considers a county (or part of a county) to be a HPSA if there are fewer than one primary care physician to every 3,500 people (or 1:3,000 if there are other factors which indicate unmet health needs). Despite significant efforts to attract physicians and other health care professionals into these counties, some have persistent problems

attracting physicians. (See Figure 8.1.) Forty-two of these counties are considered persistent health professional shortage areas (PHPSAs), designated as HPSAs in six of the last seven HPSA designations.

Figure 8.1
Forty-Two Counties in North Carolina are Persistent Health Professional Shortage Areas



Map created by North Carolina Institute of Medicine.
Data Source: Area Resource File, HPSA status for 1998, 2000, 2001,2002, 2003, 2004, 2007.
Counties defined as persistent if designated a HPSA in 6 of 7 years.

Forty-two counties are considered persistent health professional shortage areas (PHPSAs), designated as health professional shortage areas (HPSAs) in six of the last seven HPSA designations.

Historically, nurse practitioners and physician assistants have helped to address health care needs in rural and underserved communities. Between 2001 and 2005, 47% of new primary care providers in rural North Carolina counties were either NPs or PAs.[1] Nonetheless, NPs and PAs are still more likely to practice in urban areas. In 2007, there were 3.7 NPs per 10,000 population in metropolitan counties and 2.2 NPs per 10,000 in nonmetropolitan counties, 3.8 PAs per 10,000 in metropolitan counties and 2.4 PAs per 10,000 in nonmetropolitan counties.[4] (See Figure 8.2.) As for primary care physicians, there were 9.8 per 10,000 in metropolitan areas and 6.8 per 10,000 in nonmetropolitan areas (24.1 per 10,000 and 13.2 per 10,000 for physicians in general).

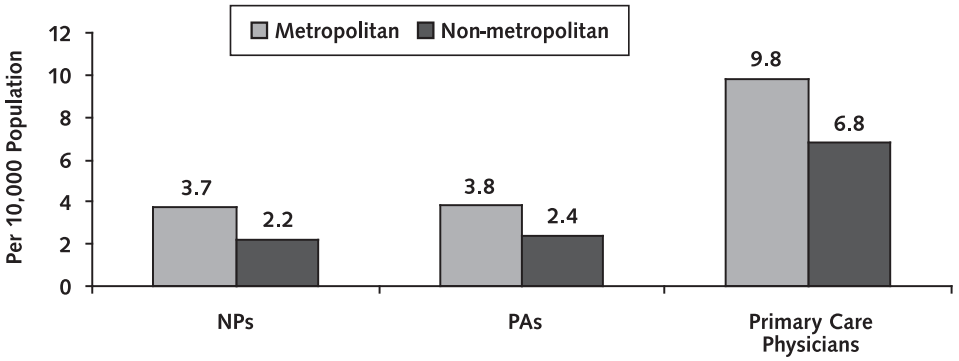
Types of Health Care Professionals Needed

Not only is North Carolina expected to experience an overall health professional shortage, but the state is also likely to experience even greater shortages among certain health specialties, including primary care, psychiatry, and general surgery.

Primary Care Providers

Fewer US-trained medical school graduates are choosing primary care professions, including family medicine, general internal medicine, obstetrics and gynecology, and pediatrics. Instead, they are selecting specialties with "more controllable lifestyles" and/or higher salaries.[4] (See Figure 8.3) Nurse practitioners and physician assistants also provide primary care services, but even among these specialties there has been growing specialization.

Figure 8.2
Medical Professionals are More Likely to Practice in Metropolitan Areas

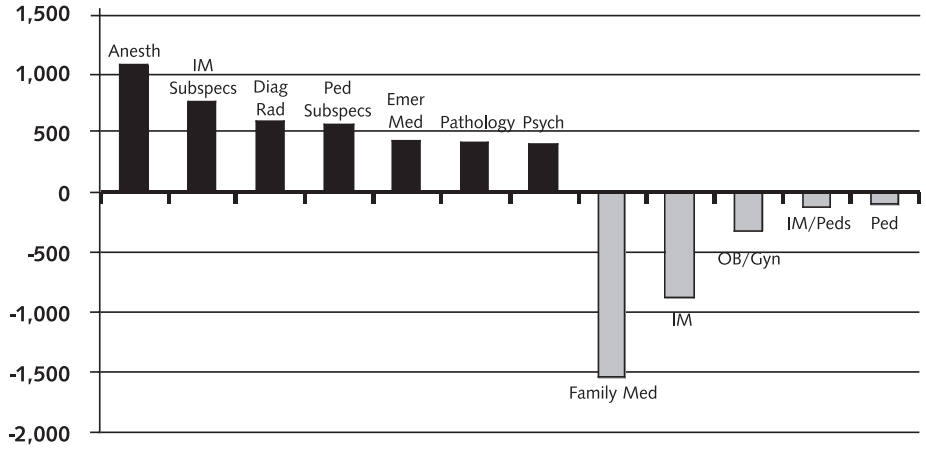


Source: Ricketts, T. Practitioner Supply and Health Care Access in North Carolina. Presented to: The North Carolina Institute of Medicine Health Access Study Group; October 21, 2008; Morrisville, NC. Citing North Carolina Health Professionals Data System, 1979-2007.

Primary care providers serve as the entry point into the health care system for most patients.[1] Some studies have shown a positive relationship between the supply of primary care providers and health outcomes in a given area, even after controlling for personal and environmental factors such as education, income, pollution, unemployment, percentage elderly, percentage urban, minority composition, seatbelt use, obesity, and smoking.[12] North Carolina has approximately 7,660 primary care physicians, or 8.8 per 10,000 population, which is below the national average of 9.43 per 10,000.[1]

North Carolina has approximately 7,660 primary care physicians, or 8.8 per 10,000 population, which is below the national average of 9.43 per 10,000.

Figure 8.3
Fewer US-Trained Medical School Graduates are Choosing Primary Care Professions, 2002-2007



Source: Ricketts, T. Practitioner Supply and Health Care Access in North Carolina. Presented to: The North Carolina Institute of Medicine Health Access Study Group; October 21, 2008; Morrisville, NC.

Ideally, everyone in the state should have access to a medical home, with primary care providers who offer comprehensive, continuous, and patient-centered care.[b] Under this model, primary care providers work with a multidisciplinary team of health professionals who help coordinate the patients' health services and engage in quality improvement activities. Patients are actively engaged in health care decision making and in caring for their own health. This model of care is important for everyone, but particularly important for people with chronic or more complex health problems. North Carolina has successfully implemented this medical home model for Medicaid recipients in Community Care of North Carolina (CCNC), described more fully in Chapter 3. CCNC, which includes primary care providers with a team of other health and social services providers, helps improve the quality of care provided to people with chronic health problems, and has led to demonstrated improvements in health outcomes and reductions in health spending.

Nationally, the number of physicians, physician assistants, and nurse practitioners working in primary care is decreasing. For example, the number of medical school graduates choosing primary care residencies dropped 50% between 1997 and 2005.

Nationally, the number of physicians, PAs, and NPs working in primary care is decreasing. For example, the number of medical school graduates choosing primary care residencies dropped 50% between 1997 and 2005.[13] Part of the explanation for this decline is low provider reimbursement, coupled with increasing demands placed on these providers. The number of recommended preventive and chronic care treatment guidelines has increased to the point that it is almost impossible for an individual physician to provide all the recommended care to patients within the regular work day.[c] While the scope of a primary care providers' practice has increased, their inflation-adjusted salaries have decreased. Between 1995 and 2003, inflation-adjusted salaries decreased 10.2% for primary care physicians, compared to a 7.1% decline for all physicians.[14] Further, primary care providers are among the lowest paid physician specialties. (See Figure 8.4.)

Psychiatrists

In North Carolina, approximately 5.4% of adults and 12% of children have a diagnosable mental illness.[d,15]Many different types of health care professionals treat people with mental illness, including psychiatrists, psychologists, primary care providers, social workers, and clinical nurse specialists. However, psychiatrists are a critical part of the health care team, especially when addressing the needs of patients with complex mental health and/or comorbid health conditions. Psychiatrists can provide medication management and psychotherapy directly to patients, and can also provide clinical consultation to other providers to enable them to treat patients with different types of mental illness.

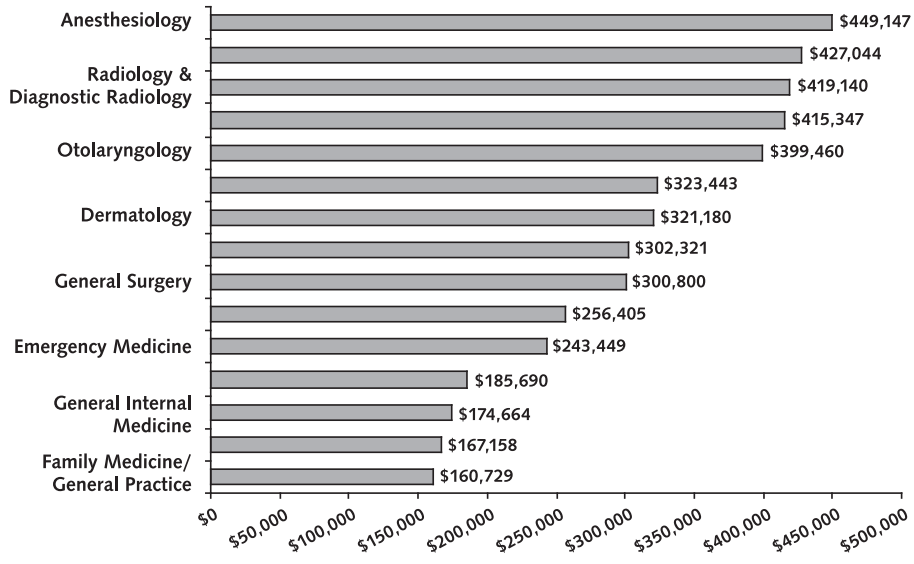
Between 1999 and 2004, nearly two-thirds of North Carolina counties experienced a decline in the psychiatrist to population ratio, or had no psychiatrists. The North

b Information on the Joint Principles of the Patient-Center Medical home can be found at: http://www.aafp.org/online/etc/medialib/aafp_org/documents/policy/fed/jointprinciplespcmh0207.Par.0001.File.tmp/022107medicalhome.pdf

c A primary care practice with a panel of 2,300 patients would have to work more than seven hours a day to provide all the recommended preventive services, and an additional 10 hours a day to provide all the recommended services to patients with chronic health conditions.

d Adults with diagnosable mental illness refer to adults with Serious Mental Illness (SMI). Children with diagnosable mental illness refer to children with Serious Emotional Disturbance.

Figure 8.4
Primary Care Providers are Among the Lowest Paid Physicians (US, 2006)



Source: Cohen J. Physician workforce: trends and expectations. Presented to: Primary Care and Specialty Summit, North Carolina Institute of Medicine; December 21, 2006. Citing Medical Group Management Association Physician Compensation and Production Survey 2001-2006.

Carolina General Assembly has appropriated funding since SFY 2007 to target this problem. In addition, with the help of state and private foundation funding, North Carolina has expanded the availability of mental health services within primary care settings. For example, the Kate B. Reynolds Charitable Trust and The Duke Endowment have helped fund ICARE, a project aimed at increasing collaboration and communication between primary care providers and mental health providers, and in increasing the ability of primary care providers to provide appropriate evidence-based mental health services to their patients.[16] Further, the North Carolina General Assembly appropriated nonrecurring funds to the Office of Rural Health and Community Care to pilot strategies for the Aged, Blind, and Disabled population. A portion of the these funds were utilized in SFY 2007 and SFY 2008 to support co-location of primary care providers and mental health professionals. While these efforts can address the health care needs of people with more mild forms of mental illness, such as depression, additional psychiatrists are needed to help manage or provide consultations for people with more severe mental illnesses or comorbid health problems.

General Surgeons

General surgeons play a critical role in the health care delivery system, particularly for small rural communities. General surgeons generate critical revenue for rural hospitals and provide invaluable health services to communities that cannot afford to hire surgical specialists. As with psychiatrists, there has been a decline in the number of general surgeons in many counties across the state. Between 2000 and

General surgeons generate critical revenue for rural hospitals and provide invaluable health services to communities that cannot afford to hire surgical specialists.

2005, there was a reduction in the number of general surgeons in 53 counties; another 22 counties had no general surgeons in 2005. While additional general surgeons may not be as needed in urban counties that have sufficient surgical specialists, general surgeons are critically important in smaller, rural areas in North Carolina.

Other Specialty Areas

Other types of health care specialists are also needed if we are going to meet the future health care needs of the state. For example, North Carolina will need a greater number of geriatricians, or other health care professionals trained in geriatrics to meet the health care needs of the growing number of older adults in the state. Similarly, North Carolina always needs providers to deliver babies. Yet the NCIOM Task Force on Primary Care and Specialty Supply found that there were eight counties without providers who reported that they provided prenatal care, and 19 counties without a physician delivering babies.

Even though minority populations comprise 30% of North Carolina's population, they only account for 18% of physicians, 12% of physician assistants, and 10% of nurse practitioners.

Underrepresentation of Minority Health Professionals

Increasing the number of underrepresented minorities practicing in North Carolina is also an important consideration if the state wants to meet the health care needs of the increasingly diverse population. Studies show that increasing diversity in health care professions improves access and quality of care for minority patients as well as for patients in shortage areas.[17] When given the option, minority patients are more likely to pick a provider with a similar racial and ethnic background.[18] Also, providers from minority groups are three times more likely than white providers to serve in whole-county health professional shortage areas. Even though minority populations comprise 30% of North Carolina's population, they only account for 18% of physicians, 12% of PAs, and 10% of NPs.[1] In order to increase the number of physicians from underrepresented minorities, it will be important to increase the number of underrepresented minorities in universities and medical schools.

Increasing Provider Supply

In order to address these projected shortages in North Carolina, the state needs to increase the number of health care professionals entering the workforce. One long-term strategy is to increase the number of medical students, NPs, and PAs, who complete their postgraduate training in North Carolina.[1] Another strategy is to increase the number of health professionals recruited from out of state.

Health Professional Training, Clinical Education, and Residency Programs

One way to increase the supply of physicians, nurse practitioners, and physician assistants is to increase the number of people trained in the state. This strategy needs to be pursued on multiple levels. The state can expand the number of students trained in North Carolina medical schools, PA, and NP programs. However, the state must concurrently expand the availability of clinical rotations and residency programs to ensure that students receive meaningful training opportunities in state. Each of these issues is described more fully on the following pages.

Medical Students: Currently, North Carolina has four medical schools, located at Duke University, East Carolina University Brody School of Medicine (ECU), University of North Carolina at Chapel Hill (UNC-Chapel Hill), and Wake Forest University Baptist Medical Center (WFUBMC). The annual number of graduates from the four schools has increased modestly in the last 30 years. Wake Forest University is the only medical school to have seen a recent increase in its class size, increasing to 120 students.[e] Approximately 40% of the students trained in North Carolina medical schools over the last 40 years have remained in the state to practice. Students originally from North Carolina are more likely to practice in North Carolina. Because the two publicly funded schools (UNC-Chapel Hill and ECU) are more likely to admit students originally from North Carolina, they tend to have a much higher proportion of students who decide to practice in North Carolina after finishing their residency programs.[1] Approximately half (49%) of UNC-Chapel Hill medical school graduates and almost three-fifths (59%) of the ECU Brody School of Medicine graduates are currently practicing in North Carolina, compared to 24% of Duke and 39% of WFUBMC graduates.

The American Association of Medical Colleges has called for a 30% increase by 2015 in medical school enrollment to meet the impending physician shortage.

The American Association of Medical Colleges has called for a 30% increase by 2015 in medical school enrollment to meet the impending physician shortage.[19] Since the release of the report from the NCIOM Task Force on Primary Care and Specialty Supply, both UNC-Chapel Hill and ECU Brody School of Medicine have developed plans to expand medical school size. UNC-Chapel Hill has plans to expand the class size from 180 to 250 students, creating satellite campuses for third and fourth year medical students at Carolinas Healthcare System in Charlotte and Mountain Area Health Education Centers Program (MAHEC) in Asheville. ECU Brody School of Medicine has plans to increase its class size from 70 to 120 students. To implement these plans will require additional state support. When fully implemented, the operational costs associated with this expansion would be approximately $40 million annually.

Nurse Practitioners and Physician Assistants: One important strategy to address the impending health professional workforce shortage is to increase the number of NPs and PAs trained in the state. Nurse practitioners and physician assistants provide a great deal of the health care services needed in the state, although their scope of practice and prescribing authority is more limited than physicians. The educational pipeline between first entering school and being licensed to practice is much shorter for PAs and NPs than it is for physicians. On average, it takes about two to three years after completing an undergraduate education to graduate from a PA or NP program, compared to a minimum of seven years of graduate education and residency programs for most physicians. There has already been significant expansion in the number of programs offering PA and NP programs and a commensurate increase in the number of non-clinician practitioners practicing in the state. Between 2001 and 2005, the number of NPs and PAs practicing in North

e Bacon T. Associate Dean and Director, Area Health Education Centers Program School of Medicine. Written (email) communication. January 15, 2009.

Carolina grew by 32%.[1] Duke University is in the process of expanding its PA program, and there have been discussions at other private universities about starting PA programs.

Medical students, along with other health professional students, receive a certain amount of their education in the classroom and part of their training in clinical rotations. Thus, programs must ensure the availability of clinical rotations in order to expand their class size. In the past, there has been a concerted effort by health professional training programs and Area Health Education Centers (AHEC) to move clinical rotations out of academic health settings and into the community. Many programs have also offered rural training sites, in order to expose students and residents to rural practice. However, it is more challenging to establish and maintain community clinical training sites. Community practitioners are needed to supervise students and residents. However, it is difficult for many community practitioners to take off time from their practice to serve as preceptors (as that reduces the time they can spend seeing patients and generating revenues).[1]

About one-half of all physicians who complete residencies in North Carolina remain here to practice.

Residency programs: About one-half of all physicians who complete residencies in North Carolina remain here to practice.[1] Location of residency is an important determinant in where physicians set up practice. Those who complete their medical education and residency in North Carolina are more likely to establish practice in the state. Thus, North Carolina cannot afford to expand the medical school size without also expanding residency training.

Currently, most residencies are supported through Medicare and Medicaid Graduate Medical Education (GME) funds, with Medicare GME funds providing most of the support. Federal Medicare funding for residency programs has been frozen since 1996. North Carolina also appropriates money to support family practice residencies, but these funds have not been increased substantially since 1994, when the North Carolina General Assembly appropriated funds to create the rural track family medicine program.[f] North Carolina needs to invest more in graduate medical education, as we currently have fewer residency slots (3.1) per 10,000 population than the national average of 3.4.[1]

Not only is it important to expand the number of residents trained in North Carolina, but it is also important to target limited state dollars to the types of health care professionals needed to meet the future health care needs of the state. North Carolina also needs to do more to expand the availability of meaningful clinical rotations in rural and underserved areas. Many health care professionals set up practice within 90 miles of where they completed their residencies.[20] Thus, one way to increase the supply of physicians practicing in rural areas is to create rural residency programs. The AHEC program has had a strong track record in creating and supporting rural family practice residency programs. There are currently eight family practice residency programs across the state which enable

f Bacon T. Associate Dean and Director, Area Health Education Centers Program School of Medicine. Written (email) communication. January 15, 2009.

state-wide community training and foster rural practice. Two-thirds (67%) of physicians who completed their residencies at AHEC family practice residencies stayed in North Carolina to practice.[1]

Expansions should focus on increasing the number of physicians in underserved areas, increasing the number of physicians who practice in primary care or other shortage specialties, increasing the number of underrepresented minorities, and increasing the role of NPs, PAs, CNMS, nurses, and other health professionals.

In order to increase the supply of primary care and specialty providers in North Carolina, the Study Group therefore recommends:

Recommendation 8.1

a) The North Carolina General Assembly should increase funding to increase the supply of primary care and specialty providers. Specifically, the North Carolina General Assembly should appropriate:

1) $40 million in recurring funds to support the expansion of the medical schools at The University of North Carolina at Chapel Hill and East Carolina University Brody School of Medicine.[g,h] State funding should be targeted to expansion efforts that result in:

i) Increased numbers of physicians who set up and maintain practices in underserved areas.

ii) Increased numbers of physicians who practice in primary care or other shortage specialties needed to meet the health care needs of North Carolina.

iii) Increased numbers of underrepresented minority physicians.

iv) Greater interdisciplinary didactic and clinical team training among physicians, nurse practitioners, physician assistants, and certified nurse midwives, nurses, and other health care professionals.

2) $1.2 million in recurring funds and/or Medicaid Graduate Medical Education to the North Carolina Area Health Educations Centers (AHEC) program in each year over the next five years to fund 12 new residency positions per year across the state targeted toward the high priority specialty areas of primary care, general surgery, psychiatry, or other specialty shortage areas.

g The expansion of the medical schools would also require approximately $400-$500 million in non-recurring capital costs to build new educational facilities at UNC-CH, ECU, Charlotte, and Asheville. The proposed expansion would increase class size at UNC-CH from 180 to 250, and at ECU from 70-120. With this expansion, there would be 120 new medical graduates per year.

h The $40 million includes $3 million to develop new clinical training sites for students with a priority on community training sites in underserved areas; pay stipends to community preceptors who supervise and teach primary care students; and 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.

i) 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 create programs designed to graduate physicians likely to settle in rural and other underserved areas of the state.

ii) $3 million in non-recurring funds should be provided in SFY 2010 and SFY 2011 and $2 million in non-recurring funds in SFY 2012 to help pay for the capital costs involved in developing new community-based residency programs across the state.

b) The North Carolina General Assembly should direct General Administration within the University of North Carolina System to explore the possibility of further expansion of physician assistants and nurse practitioner programs in the University of North Carolina System in order to:

1) Increase the numbers of nurse practitioners and physician assistants who set up and maintain practices in underserved areas.

2) Increase the numbers of nurse practitioners and physician assistants who practice in primary care or other shortage specialties needed to meet the health care needs of North Carolina.

3) Increase the numbers of underrepresented minority nurse practitioners and physician assistants.

4) Allow for greater interdisciplinary didactic and clinical team training among physicians, nurse practitioners, physician assistants, certified nurse midwives, nurses, and other health care professionals.

Recruitment and Retention Efforts

Providers want to ensure that their practice will be economically viable before establishing practice in a community.

Underserved Areas

As noted earlier, there are 11 full counties and parts of 49 other counties that are considered health professional shortage areas. Shortages are particularly acute in the eastern part of the state, as well as rural areas in the Piedmont. Although the current federal shortage areas only concentrate on primary care, dental, and behavioral health, there are severe shortages of other specialties in some areas of the state. In many rural areas, residents lack access to specialty services, even when they have adequate access to primary care.[21]

Not surprisingly, providers want to ensure that their practice will be economically viable before establishing practice in a community. This is a particular problem for newly licensed physicians, who typically graduate with extensive medical school loans. More than three-quarters of medical school graduates in 2007 had debt of at least $100,000, with the average medical school graduate in 2007 being $139,517 in debt.[22] As a result, graduates are likely to establish practices in specialties or locations in which they can quickly pay off their debt.

The volume of paying patients in some rural areas may not be large enough to cover operating expenses. Not only do rural areas have fewer patients, but they often have

fewer insured patients—as rural communities typically have higher than average numbers of uninsured individuals who may be unable to pay for services.[1] In addition, people in rural areas are also more likely to be covered by Medicare and Medicaid than those in urban areas.[23] Reimbursement from public programs is lower than commercial insurance, thus further limiting the revenues that rural practices can generate.[23]

Economic incentives need to be established to improve the economic viability of rural practices. One option that the Health Access Study Group recommended was to increase the Medicaid reimbursement rates from 95% of Medicare rates to 100% for primary care practitioners in health professional shortage areas. Other incentives that could be used to encourage practitioners to set up practice in rural or other medically underserved areas include scholarships, loans, loan repayment programs, and direct incentives such as payment for capital costs. The Office of Rural Health and Community Care (ORHCC) is a state-managed program using such incentives to encourage providers to practice in rural communities. Eligible physicians can receive grants of $70,000 (plus 39% tax subsidy) over four years, and PAs and NPs can receive $30,000 (plus 39% tax subsidy) over three years. Approximately 75% of all loan recipients fulfill their obligation.[1] Strengthening the ORHCC would make practicing in rural areas in North Carolina a more attractive and financially viable option.

To address the maldistribution of health care professionals, and ensure that there are sufficient providers practicing in underserved areas, the Study Group recommends:

Recommendation 8.2 (PRIORITY RECOMMENDATION)

In order to maintain and expand access to health care services for low-income and underserved populations, the North Carolina General Assembly should:

a) Continue to support the Community Care of North Carolina (CCNC) program.

b) Continue to tie Medicaid reimbursement to physicians at 95% of the Medicare rates.

c) Direct the Division of Medical Assistance to increase the payment for primary care practitioners practicing in health professional shortage areas either by increasing reimbursement rates or establishing a higher per member per month (pmpm) CCNC payment.

d) The North Carolina General Assembly should appropriate $1,915,600 million in recurring funds in SFY 2010 to the North Carolina Office of Rural Health and Community Care (ORHCC). Of this amount:

1) $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;

2) **$1.5 million should be appropriated to pay for loan repayment and financial incentives to recruit and retain primary care physicians, physician assistants, nurse practitioners, and certified nurse midwives, psychiatrists, psychiatric physician assistants, psychiatric nurse practitioners, general surgeons, and dentists to rural and underserved communities; and**

3) **$65,600 should be appropriated to expand the number of ORHCC staff who recruit practitioners into health professional shortage areas.**

4) **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.**

The state should also explore other options to encourage providers to practice in underserved areas. This may include offering tax incentives to help practitioners offset the costs of establishing a practice in an underserved area, increasing reimbursement through the State Health Plan and/or NC Health Choice, paying malpractice premiums, or grants to help establish electronic health records. The Health Access Study Group also recommended that the state continue support for ongoing efforts to small rural hospitals to enable them to pay for call coverage or hiring physicians to practice full-time in the hospital (relieving after hours call-coverage for rural practitioners). The Study Group recommends:

Recommendation 8.3

In order to expand the health professional workforce in underserved areas of the state:

a) **The North Carolina General Assembly should direct the North Carolina Office of Rural Health and Community Care (ORHCC) to explore different forms of financial incentives or other systems to encourage providers to establish and remain in practice in underserved areas or with underserved populations, and report the findings back to the 2011 Session of the North Carolina General Assembly. The ORHCC should work with the North Carolina Medical Society Foundation and other relevant groups to identify appropriate incentives which may include, but not be limited to: tax incentives, increased reimbursement, malpractice premium subsidies, or grants to help practices purchase electronic health record operating systems.**

b) **The North Carolina General Assembly should continue support to existing programs to enable them to work with practices in underserved areas to assist with systems redesign and quality improvement initiatives. These strategies could include, but not be limited to providing support to small rural hospitals to help pay for call coverage or use of hospitalists.**

Because financial viability is such a key element of enabling providers to practice in underserved areas, it will be important for providers to be sufficiently trained with management skills. This includes training on health care billing systems to ensure that outstanding balances are collected. Few residency programs or health professional training schools provide training on business skills needed to establish

or maintain viable practices. This makes it difficult for providers to consider opening a solo or small practice in an underserved area.

Providers often hire practice managers to handle the business side of their practice. Practice managers bring a particular skill set, including proficiency in the array of reimbursement forms and procedures used to receive payment for services. Practice managers have the potential to increase the long-term financial viability of practices in rural and underserved areas.[1]

Other organizations work with providers to provide training in basic financial and clinical management systems. These include the North Carolina Office of Rural Health and Community Care, which helps rural practices and federally qualified health centers by improving billing and management systems, and by increasing financial performance. Providers and practice managers would benefit from continuing education which would enhance their business skills and keep them up to date on health care management techniques. Therefore, the Study Group recommends:

Recommendation 8.4

In order to improve the skills of health care professionals and practice managers to handle the business aspects of running a health care practice:

a) **The North Carolina General Assembly should appropriate $250,000 in recurring funds in SFY 2010 to the North Carolina Office of Rural Health and Community Care (ORHCC). ORHCC should use funding to support technical assistance provided through the ORHCC and the North Carolina Medical Society Foundation *PracEssentials* programs to practices in underserved areas or serving underserved populations.**

b) **The University of North Carolina system, North Carolina community colleges, and North Carolina independent colleges and universities should offer courses that can improve the skills of existing practice managers and increase the supply of new practice managers across the state. These courses should be targeted to underserved areas of the state.**

c) **The North Carolina Area Health Education Centers Program, OHRCC, Community Practitioner Program, North Carolina community colleges, and North Carolina independent colleges and universities should develop educational and continuing education courses for existing practitioners and staff to enhance the business skills needed to maintain a viable practice.**

d) **North Carolina foundations should consider funding start-up programs at community colleges and other organizations to enhance the skills of practice managers and providers and programs targeted to underserved areas.**

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