Fact Sheet

Providers in Demand:

North Carolina's Primary Care and Specialty Supply

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Current Provider Growth is Insufficient to Meet North Carolina's Growing Healthcare Needs

Access to healthcare providers, including physicians, physician assistants, nurse practitioners, and certified nurse midwives, is very important to the health of individuals and populations. In the past 20 years, the ratio of providers-to-population has increased in North Carolina, but the rate of increase recently has slowed. In 2005, the state had 18.9 physicians to every 10,000 people, which is about average compared to all US states. However, in the future, North Carolina will face challenges meeting the population's demands for care. The state's healthcare needs are expected to increase due to population growth, aging of the population, and increased prevalence of chronic diseases. If nothing is done to improve growth in provider supply in North Carolina, the ratio of physicians to population is expected to drop 8% by 2020 and 21% by 2030. (See Table 1.) The ratio of all providers-to-population, including physician assistants, nurse practitioners, and certified nurse midwives, is expected to drop between 2% and 13% by 2030. The problem is projected to grow even more acutely if projections factor in increased needs due to aging of the population (adjusted population figures).

Many areas of our state are currently experiencing provider shortages. Access to healthcare in rural areas and in some inner-city areas has historically been a challenge. Eleven North Carolina counties and parts of 40 other counties were considered primary care health professional shortage areas in 2005.[a] Of these, 38 counties have failed to meet the minimum primary care provider-to-population ratio for six of the last seven years.

There are significant maldistribution problems among certain specialties, including psychiatry, general surgery, and providers that deliver babies.

- Between 2000 and 2005, 32 counties experienced a decline in the proportion of psychiatrists-to-population, and 24 counties had no psychiatrist in either year. The supply of child psychiatrists is even more limited. In 2004, 43 counties had no child psychiatrists, and another 42 counties had fewer than one child psychiatrist per 10,000 children. Further, the number of child psychiatrists has declined 24% over the past decade.
- From 2000 to 2005, 53 counties experienced a loss in general surgeons relative to population, and five counties lost all general surgeons. Losing a general surgeon in a rural community can have a large impact because general surgery is often a key component to a rural hospital's financialsustainability.[1]
- From 2000 to 2004, more than half (52) of North Carolina counties experienced a decline in the ratio of physicians delivering babies to women of child bearing years or had no physicians providing deliveries.

Table 1.
Projected Change in Provider-to-Population Ratios, North Carolina, 2020 and 2030

	Projected Change in Provider-to-Population Ratios		Projected Change in Provider-to-Adjusted Population Ratios	
	2020	2030	2020	2030
Physicians only	-8%	-21%	-12%	-26%
All providers				
Best case	4%	-2%	-1%	-8%
Worst case	-4%	-13%	-8%	-19%

Source: North Carolina Institute of Medicine and the North Carolina Health Professions Data System.

a The Bureau of Health Professions in the US Department of Health and Human Services has designated certain communities, population groups, and medical facilities as Health Professional Shortage Areas (HPSAs). Certain counties, or parts thereof, are considered HPSAs if they have fewer than one primary care provider per 3,500 people or only one primary care provider per 3,000 people in high-needs areas.

North Carolina has a shortage of underrepresented minority providers. Studies suggest minority patients are generally more satisfied with care received from providers of similar race and/or ethnicity.[2] Furthermore, underrepresented minorities are more likely to practice in underserved areas, which could lessen the maldistribution problem.[3,4,5] However, the state is producing far too few providers from underrepresented minority populations to meet the needs of North Carolina. African Americans and Hispanics are particularly underrepresented among physicians, nurse practitioners, physician assistants, and certified nurse midwives relative to the population. Furthermore, as the cultural and linguistic diversity of the state increases, providers who can communicate effectively in other languages will be critical.

The state should develop a comprehensive plan that addresses overall provider shortages and shortages of specific specialties, maldistribution problems, and underrepresentation of minorities in health professions. Some strategies to address these problems include restructuring the healthcare delivery and finance system to create new and more efficient systems of care, increasing provider supply, incentivizing providers to work in underserved areas, providing additional support to underrepresented minority health professional students and providers, and modifying training environments to encourage work in underserved areas or specialties. These options are not mutually exclusive and should be targeted in a strategic way to address the variety of challenges facing North Carolina.

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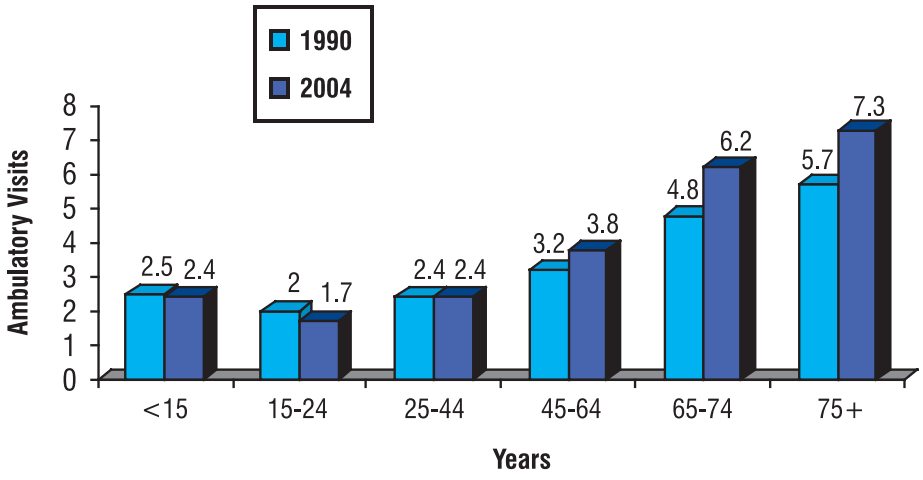
North Carolina Can Address the Anticipated Provider Shortage by Developing New Models of Care or Increasing Provider Supply

Access to healthcare providers (physicians, physician assistants, nurse practitioners, and certified nurse midwives) contributes to the overall well-being of the population. Studies have shown people with less access to medical care live shorter lives, with more disability and lower productivity.[1] While evidence suggests more providers in a community does not inevitably lead to better health outcomes,[2] other data suggest having too few providers, especially in underserved areas, can adversely affect health status.[3,4]

Current growth in the number of physicians, physician assistants, nurse practitioners, and certified nurse midwives will not be enough to keep pace with North Carolina's growing healthcare needs. In 2005, the state had 18.9 physicians to every 10,000 people, which is about average compared to all US states. A number of factors are likely to increase need for healthcare services in North Carolina: growth of the overall population, aging of the population (with rapid growth in the number of adults age 65 or older), aging of the healthcare workforce leading to increased retirement among health professionals, and increase in the prevalence of chronic disease. The population is expected to grow 25.4% in North Carolina between July 2004 and July 2020. At the same time, provider growth is only expected to increase 23%. Furthermore, North Carolina's population of older adults (65 or older) is expected to grow 59% between July 2004 and July 2020.[5] This growth will impact the need for healthcare services because as individuals age, they use more health services. (See Chart 1.)

Growth in the number of people with chronic illnesses also affects demand for services because healthier individuals generally use fewer health services and less healthy individuals use more. If nothing is done to increase the projected growth in provider supply in North Carolina, the ratio of physicians-to-population is expected to drop 21% by 2030 and the ratio of all providers-to-population, including physician assistants, nurse practitioners, and certified nurse midwives, is expected to drop between 2% and 13% during the same time period. If projections factor in the likely increase in demand for healthcare services (due to aging of the population), the effective ratio of all providers-to-population is likely to decrease between 8% and 19% by 2030.

Chart 1.
Average Number of Ambulatory Visits by Age of Patient, 1990 and 2004



Source: National Center for Health Statistics. *National Ambulatory Medical Care Survey (NAMCS)*. Number, percent distribution, and annual rate of office visits with corresponding standard errors, by patient characteristics: United States, 2004. Hyattsville, MD: National Center for Health Statistics. Advance Data No. 374; Table 3. Available online at: http://www.cdc.gov/nchs/data/ad/ad374.pdf. Accessed August 24, 2006. National Center for Health Statistics. *National Ambulatory Medical Care Survey (NAMCS)*. Number, percent distribution, and annual rate of office visits by patient's age, sex, race and geographic region: United States. Hyattsville, MD: National Center for Health Statistics. Advance Data No. 213; Table 1. Available online at: http://www.cdc.gov/nchs/data/ad/ad213.pdf. Accessed September 15, 2006.

There are two different approaches the state can take to address projected provider shortages over the next 20 to 25 years: restructure the healthcare delivery and finance system to create new and more efficient systems of care (particularly for people with chronic illnesses) or increase provider supply. These options are not mutually exclusive—North Carolina can both redesign the healthcare delivery system while at the same time expanding the overall supply of providers.

There are a number of ways to consider restructuring the healthcare delivery system to increase quality and efficiency of care, including provider substitution and interdisciplinary team-based care. The provider substitution model focuses on using non-physician clinicians to care for patients with routine problems, allowing physicians to manage the care of patients with more complex health conditions. There are a variety of different models for interdisciplinary team-based care, which generally involves a network of different care providers helping to manage a patient's care. These models are frequently used with chronically ill populations and can be cost-effective while improving quality of care.[6] However, neither team-based care nor substitution models have been researched sufficiently to determine their impact on productivity. Therefore, absent evidence that new models will improve productivity, the state also will need to take steps to increase the supply of primary care and specialty providers.

Based on these issues, the Task Force encouraged action upon the following priority recommendations:

- **Develop a health professions workforce research center charged with identifying current and future needs for health professionals;**
- **Identify, develop, and fund new models of care to improve the quality and efficiency of primary and specialty care across North Carolina;**
- **Support technical assistance for small practices trying to implement health information technologies;**
- **Increase total enrollment in North Carolina medical schools and physician assistant, nurse practitioner, and certified nurse midwife programs;**
- **Financially reward North Carolina health professions schools that produce graduates who help meet the state's health professional shortage needs, including underrepresented minorities, psychiatrists, general surgeons, providers delivering babies, and providers reaching underserved populations;**
- **Fund the North Carolina Area Health Education Centers Program to support additional and expanded clinical rotations for health science students and to expand primary care residency programs; and**
- **Offer courses to increase the supply of practice managers across the state and to enhance the business skills of practitioners and staff.**

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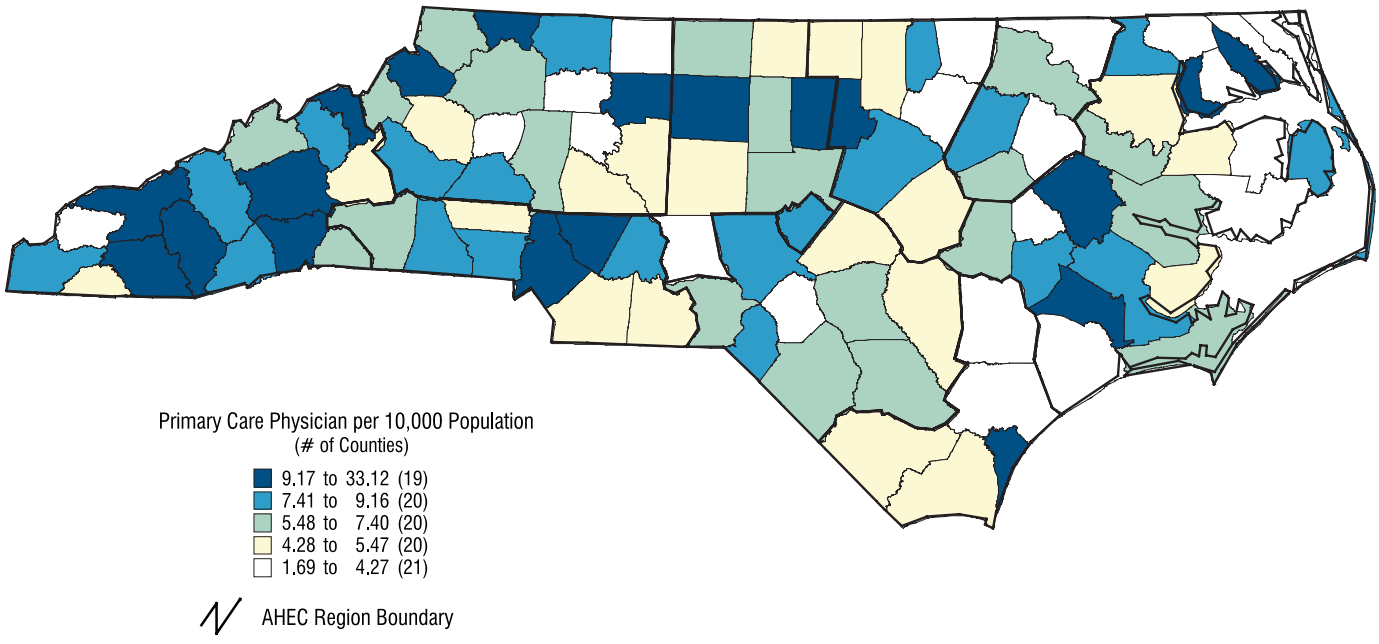
Certain Areas of North Carolina Are Facing an Acute Shortage of Healthcare Providers

Some areas of North Carolina have an abundance of health professionals, while others lack sufficient providers, forcing individuals to travel long distances for healthcare.

Healthcare providers tend to congregate around academic health centers or around major hospitals in metropolitan areas while shortages typically exist in rural areas or low-income areas of larger cities. Orange and Durham counties, which have major teaching hospitals, had the highest primary care physician-to-population ratios in 2005 with 33.7 and 22.5 per 10,000 population, respectively. By contrast, Gates and Camden counties, which are rural and have no hospitals, had the lowest primary care physician per population ratios with 0.9 and 1.1 per 10,000 population, respectively. Eight of the ten counties with the lowest ratios of primary care physicians per 10,000 population are located in eastern North Carolina.[1] (See Map 1.) Counties that are habitually designated as primary care Health Professional Shortage Areas (HPSAs) may be considered Persistent Health Professional Shortage Areas (PHPSAs). PHPSAs are disproportionately rural and poor,[2] and the majority of whole-county PHPSAs are located in eastern North Carolina. Physician assistants and nurse practitioners provide a significant amount of care in rural areas compared to their physician counterparts. In 2005, they accounted for 36% of total primary care providers in whole-county HPSAs compared to 33% of primary care providers in counties not designated as HPSAs.

Map 1.
Primary Care Physicians per 10,000 Population by County, North Carolina, 2004



Source: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the North Carolina Medical Board, 2004.

Primary Care Physicians include active or unknown activity status, in-state, non-federal, non-resident-in-training allopathic and osteopathic physicians indicating a primary specialty of Family Practice, General Practice, Internal Medicine, Ob/Gyn, or Pediatrics.

Lack of primary care providers may lead to worse health outcomes. Many studies have found areas with lower primary care supply have higher mortality rates and higher hospitalization rates for conditions that should have been managed on an outpatient basis.[3,4]

Providers choose their location of practice based on a number of factors, including training location, economic potential, and lifestyle and family preferences. Provider practices must be financially sustainable. This is a challenge for providers in rural areas that lack population density and in low-income communities where a higher proportion of people lack health insurance.[5] Financial incentives and practice support will increase the financial viability of practices treating historically underserved areas and populations.

National research has found physicians are more likely to practice in rural communities if they have a rural background, a spouse who was raised in rural areas, or an interest in rural practice.[6] Although minority health professionals in North Carolina do not necessarily practice in rural areas, they are more likely to serve minority and other underserved populations. Identifying health professional school applicants likely to practice in historically underserved areas or with underserved populations and nurturing their professional development will increase access to providers for underserved groups.

During medical school and residency, physicians make strong professional and social connections to their communities. As a result, physicians tend to cluster around these locations when they enter practice. Increasing the number of training opportunities in underserved areas will make physicians more likely to practice in such areas when they complete their training.

To address these issues of maldistribution, the Task Force encouraged action upon the following priority recommendations:

- **Explore financial incentives to encourage providers to practice in underserved areas;**
- **Encourage foundations to fund demonstrations of new models of care that serve rural and urban underserved patients;**
- **Fund the Office of Rural Health and Community Care to recruit and provide financial support for practitioners in underserved areas; and**
- **Provide financial incentives to North Carolina health professional schools that produce professionals who address the underserved needs of the state.**

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North Carolina Lacks Primary Care Providers and Certain Specialists in Parts of the State

Growth in the number of primary care providers per population is decreasing and is unlikely to keep pace with the growing population in coming years. Primary care providers are not well distributed across the state. In many counties, the supply of primary care providers to population is getting worse. Between 2001 and 2005, 30 North Carolina counties experienced a decrease in their primary care providers-to-population ratio compared to 11 counties between 1996 and 2000. Fourteen of the 30 counties with a decrease in primary care providers per population are persistent health professional shortage areas, meaning they have been designated as primary care health professional shortage areas in six of the past seven years. While the scope of primary care practice has increased, inflation-adjusted reimbursement for primary care services has decreased over the last ten years.[1] As a result, fewer physicians, physician assistants, and nurse practitioners are choosing to enter primary care fields, instead moving towards specialization.[2,3] Fortunately, osteopathic physicians, physician assistants, and nurse practitioners are experiencing rapid growth and offer some opportunity to address the shortage of allopathic physicians entering primary care.

Access to prenatal and delivery services varies widely across North Carolina. Eight counties have no providers offering prenatal care and 19 counties have no physicians delivering babies. Furthermore, between 2000 and 2004, more than 50% of counties in the state experienced a drop in the number of providers delivering babies (40) or had no provider delivering babies in either year (12). However, the loss of physicians delivering babies appears to have a minimal impact on the average distance traveled to deliver babies.[4] Although the number of practitioners delivering babies (OB/GYNs, family physicians, and certified nurse midwives) has grown over the last five years, their practices are poorly distributed across the state.

The current supply of general surgeons is adequate at the aggregate level, but general surgeons are not well distributed across the state. Twenty-two North Carolina counties had no general surgeon in 2005, and ratios are decreasing in many other counties. Between 2000 and 2005, 53 counties experienced a decline in the number of general surgeons per population and five counties lost all general surgeons. Furthermore, trends indicate fewer medical graduates are choosing to practice in general surgery. For most entering surgeons, progressive specialization is narrowing their scope of practice. A decline in general surgeons will likely have the largest negative impact on rural areas, where general surgeons are viewed by hospital administrators as a key component of the rural hospital's financial viability.[5]

North Carolina has a shortage of child psychiatrists, and access to adult psychiatrists generally varies based on the area of the state. In 2004, 43 counties had no child psychiatrists, and another 42 counties had fewer than one child psychiatrist per 10,000 children. Furthermore, the supply of physicians with a primary specialty in child psychiatry has declined 24% over the past decade. Adult psychiatrists also are difficult to access in many parts of the state. In 2004, there were 17 counties with no psychiatrists, and another 27 counties with ratios low enough to be designated as mental health professional shortage areas.[6] Between 1999 and 2004, nearly two-thirds of all North Carolina counties either saw a decrease in their psychiatrist-to-population ratio or had no psychiatrist. Psychiatrists are less likely to locate in rural and health professional shortage areas, making access a serious problem for many in the state. Furthermore, between 2003 and 2005, the public mental health system saw a 16% decrease in the number of psychiatrists serving patients.[7]

To address these issues related to primary care and specialty care, the Task Force encouraged action upon the following priority recommendations:

- Enhance payments to primary care providers to incentivize the provision of a medical home and chronic disease management services;
- Fund malpractice premium subsidies for providers delivering babies in medically underserved areas;
- Target support to establish new models of care to serve publicly-funded mental and behavioral health patients in rural and underserved communities;
- Provide reimbursement for psychiatric consultations for primary care providers and other clinicians and psychiatric care provided by primary care providers;
- Evaluate reimbursement levels for mental and behavioral health services and assure they are adequate for care in underserved areas; and
- Provide financial incentives to North Carolina health professions schools that produce professionals practicing in the state's specialty shortage areas.

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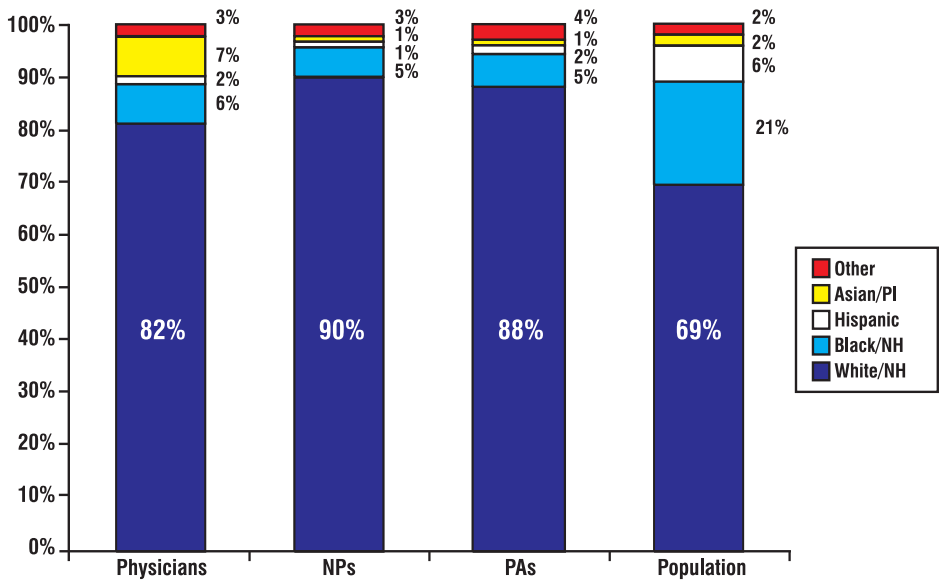
Minorities Are Underrepresented in the Health Professions in North Carolina

Minority populations comprise 30% of North Carolina's population, but they account for only 18% of physicians, 12% of physician assistants, and 10% of nurse practitioners in the state.[1] African Americans, American Indians, and Hispanics are particularly underrepresented in the health professions. (See Graph 1.) Further, the current enrollment in health professional schools does not reflect the state's diverse population.

Graph 1.
Race of Population and Providers, North Carolina, 2004.



Source: NC Health Professions Data System and US Census. Note: Other includes American Indian.

A diverse healthcare workforce is important because when given the option, people are more likely to pick a provider that has a similar racial and ethnic background.[2] Furthermore, minority patients have lower levels of trust in providers of other racial groups.[3] Some of these concerns could be overcome if more minority providers were available to serve these patients.

Underrepresented minority providers also are more likely to practice in underserved areas than are white providers. Underrepresented minority providers are three times more likely than white providers to serve in whole-county persistent health professional shortage areas[a] (PHPSAs)—12% for minority providers compared to 4% for white providers—and are more likely to serve in part-county PHSPAs—42% for minorities and 34% for whites. Healthcare providers from underrepresented minority groups are more likely to serve patients of their own ethnicity or race and patients with poor health status.[4,5,6] This practice is very important because African Americans, American Indians, and Hispanics are more likely to lack health insurance, suffer from certain chronic health conditions, and report access barriers.[7]

More multilingual and multicultural providers are needed to reduce language and cultural barriers to healthcare services. In North Carolina, there are approximately 150,000 Spanish-speaking residents who do not speak English well or do not speak English at all.[8] Studies show people with limited English proficiency are more likely to report being in fair or poor health and are more likely to defer needed medical care, miss follow-up appointments, and experience drug complications.[9,10] Multilingual providers can help address language barriers for the growing Latino and immigrant populations. Providers also should understand how

a Health professional shortage areas (HPSAs) define and justify a rational service area for the delivery of health services, have a sufficiently low provider-to-population ratio, and show evidence that nearby resources are overutilized, too distant, or otherwise inaccessible. Persistent HPSAs are those that have been designated as HPSAs in six of the last seven years. An entire county (whole-county) or part of a county can qualify as a HPSA.

patients' cultural beliefs and practices can impact their health.

Based on these issues, the Task Force encouraged action upon the following priority recommendations:

- **Existing health professions schools should consider and implement strategies to expand the number of underrepresented minority healthcare providers;**
- **Financial incentives should be provided to North Carolina health professional schools that produce minority health professionals;**
- **North Carolina health professions schools should recruit and admit more multilingual and multicultural students, offer Spanish medical language training, and build cultural sensitivity training into their curricula; and**
- **The North Carolina Area Health Education Centers Program should evaluate and expand successful minority health professions pipeline programs and develop a statewide student tracking and evaluation system.**

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For more information about North Carolina's Primary Care and Specialty Supply visit http://www.nciom.org/projects/supply/primary_specialty.html or contact Pam Silberman, JD, DrPH, President & CEO. North Carolina Institute of Medicine. 5501 Fortunes Ridge Drive, Suite E, Durham, NC 27713. 919-401-6599 ext 23. pam_silberman@nciom.org.

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