

**Providers in Demand:**  
North Carolina's  
Primary Care and  
Specialty Supply  
June 2007

North Carolina Institute of Medicine  
In collaboration with the North Carolina Health Professions Data System 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  
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# Providers in Demand: North Carolina's Primary Care and Specialty Supply

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Fact Sheet 2 of 5

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

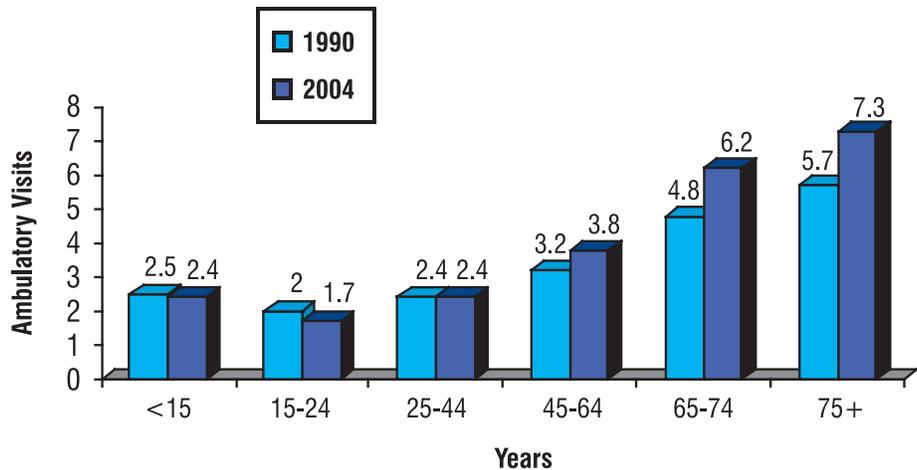
*Access to healthcare providers (physicians, physician assistants, nurse practitioners, and certified nurse midwives) contributes to the overall well-being of the population.* Studies have shown people with less access to medical care live shorter lives, with more disability and lower productivity.<sup>1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

*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.<sup>5</sup> 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.<sup>6</sup> 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.

#### References

1. Millman M, ed. *Access to Health Care in America*. Institute of Medicine. Washington, DC: National Academy Press; 1993.
2. Goodman DC, Stukel TA, Chang C, Wennberg JE. End-of-life care at academic medical centers: Implications for future workforce requirements. *Health Aff*. March/April 2006;25(2):521-531.
3. Robst J, Graham GG. The relationship between the supply of primary care physicians and measures of health. *Eastern Econ J*. Summer 2004. Available at: [findarticles.com/p/articles/mi\\_qa3620/is\\_200407/ai\\_n9452295](http://findarticles.com/p/articles/mi_qa3620/is_200407/ai_n9452295). Accessed November 16, 2006.
4. Shi L, Macinko J, Starfield B, Wulu J, Regan J, Politzer R. The relationship between primary care, income inequality, and mortality in US states, 1980-1995. *J Am Board Fam Pract*. Sept-Oct 2003;16(5):412-422.
5. North Carolina State Demographics. County total age groups standards: July 2004; July 2020. Available at: <http://demog.state.nc.us/>. Accessed October 23, 2006.
6. Phillips RL, Harper DC, Wakefield M, Green LA, Fryer GE. Can nurse practitioners and physicians beat parochialism into plowshares? *Health Aff*. September/October 2002;21(5):133-142.

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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](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](mailto:pam_silberman@nciom.org).