

Location, Location, Location: North Carolina Faces a Shortage of Primary Care and Specialty Practitioners in Rural and Underserved Counties

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It was a downturn in the overall supply of physicians per 10 000 population that prompted the North Carolina Institute of Medicine (NC IOM) to examine the emerging physician shortage in North Carolina. However, what will ultimately matter, and what presents the most pressing policy challenge, is whether we will be able to get the right mix of practitioners in the right places to meet the health care needs of North Carolina's citizens.

Health workforce researchers have long debated how to define a workforce shortage (ie, how many practitioners are too few?), what constitutes the right mix of primary care and specialist physicians to meet population needs, and what is the ideal balance of physician and nonphysician practitioners such as physician assistants, nurse practitioners, and certified nurse midwives in a particular health care setting. While these are important topics to discuss and debate, we must make policy decisions now based on our best understanding of the information currently available.

The objective of this commentary is to use data from the North Carolina Health Professions Data System (HPDS) to summarize what we know about the supply and distribution of primary care

practitioners, practitioners who deliver babies, general surgeons, and psychiatrists and to suggest what might be done to address shortages and maldistribution of practitioners in these specialties.^a

Primary Care Practitioners

Primary care practitioners (PCPs)^b are those clinicians who see patients with the most common medical problems. Primary care clinicians serve as the entry point into the medical system for most patients and they coordinate care for patients requiring

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specialty services. While there is some evidence that fewer practitioners are selecting primary care specialties,¹ North Carolina continues to have more primary care physicians relative

a Undoubtedly shortages of other specialty providers exist but data and resource limitations prevent a fuller examination of all specialty areas. For example, although we know that North Carolina's rapidly aging population has increased the demand for geriatric care, in 2005 only 293 physicians reported a primary or secondary specialty in geriatrics or family practice, geriatrics. Physicians in other specialties (ie, internal medicine) are providing geriatric care but without information on the physician's patient panel there is no way to assess the adequacy of supply.

b Primary care practitioners are defined as physicians, nurse practitioners, and physician assistants who indicate a primary specialty in general practice, family practice, internal medicine, obstetrics and gynecology, or pediatrics. All certified nurse midwives are considered to be in primary care.

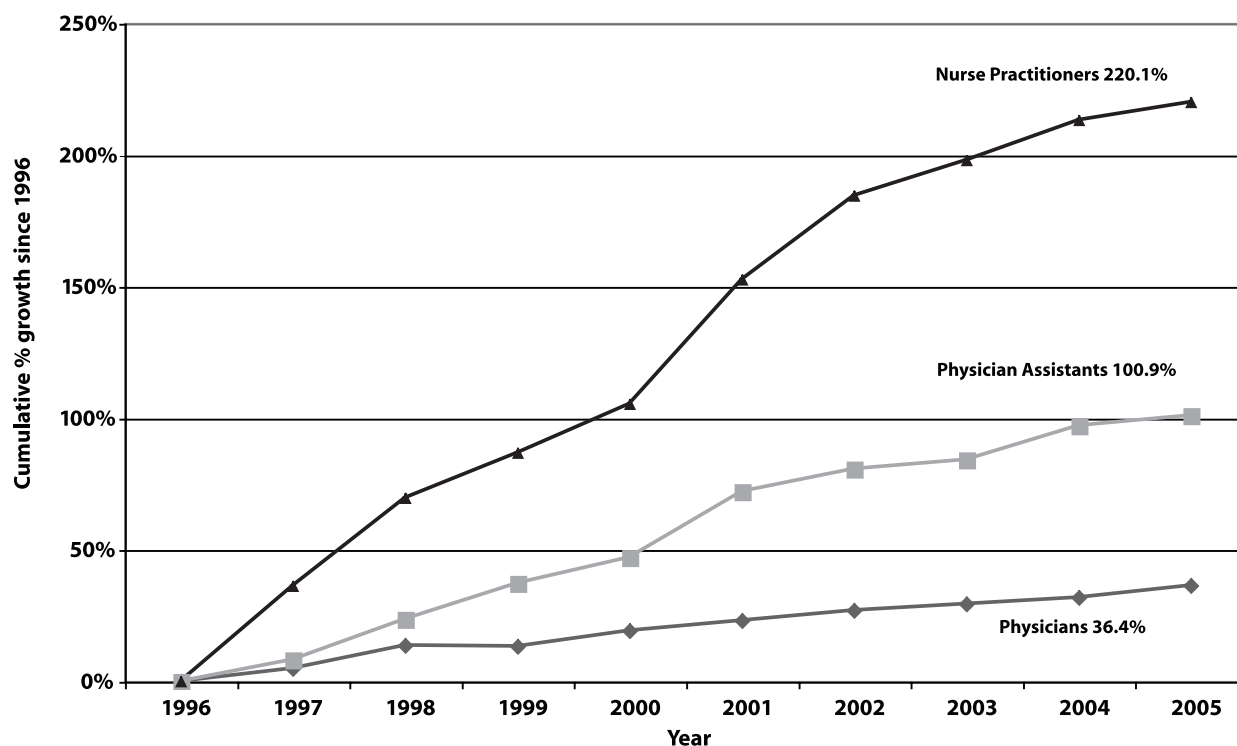
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to population size than the United States' average.² Nurse practitioners (NPs) and physician assistants (PAs) make up an increasingly important component of North Carolina's primary care workforce. Over the past decade, the supply of primary care NPs and PAs outstripped physician growth. While physician supply grew by 36.4% between 1996 and 2005, NPs increased by 220.1% and PAs grew by 100.9%. (See Figure 1.) The rapid growth of PA and NP supply has been especially important in rural areas of the state. Between 2001 and 2005, almost half (47%) of the 264 primary care practitioners gained in rural counties were either NPs or PAs. Despite these gains, North Carolina has faced an increasing shortage of primary care practitioners in the state's most underserved counties. Between 2001 and 2005, 30 counties experienced a decrease in primary care practitioners to population ratios compared to 11 counties between 1996 and 2001. Fourteen of the 30 counties where supply declined relative to population have been designated as primary care health professional shortage areas in 6 of the past 7 years.¹ The net result of these trends is that while the overall supply of primary care practitioners is not yet problematic, there is a maldistribution of practitioners across the state.

Practitioners Who Deliver Babies

An important component of primary care is access to obstetric care services. Despite significant anecdotal evidence that fewer providers are delivering babies in North Carolina due to rising malpractice rates, the number of obstetricians/gynecologists and family physicians who reported delivering babies rose between 2000 and 2005. Concomitantly, the number of births per delivering physician declined from 139.3 in 2000 to 125.7 in 2005.^c The supply of certified nurse midwives also increased over the period from 167 in 2000 to 195 in 2004. An important caveat to this generally good news about the supply of obstetric care practitioners is that between 2003 and 2004, there was a 12% decline in the number of family physicians (FPs) delivering babies and of the 101 physicians who stopped providing deliveries between 2003 and 2004, 56 (56%) were FPs. This represents a disproportionate share since family physicians comprise just 10% of total physicians delivering babies. This trend does not bode well for the distribution of obstetric care in rural areas because family physicians provide 26% of delivery services in rural counties. If their numbers continue to decline at such a rapid rate or action is taken on the

Figure 1.
Cumulative Percent Growth in Primary Care Physicians, Physician Assistants, Nurse Practitioners, and Certified Nurse Midwives, Relative to 1996



c There was a slight decrease in the supply of physicians delivering babies between 2004 and 2005 but it is unclear whether this decrease reflects a true trend or a data aberration caused by a change in the way the Medical Board collects this information from physicians.

currently debated question of removing obstetrical training from FP training programs, the supply of practitioners who deliver babies in rural areas may be further compromised. As it is, there are 19 counties in North Carolina without a physician who delivers babies;^d 12 of these counties have not had a physician deliver a baby in the last 5 years. While there is evidence that the average distance traveled by women delivering babies has not increased,³ it is not known whether birth outcomes are worse for mothers in counties with no, or limited, access to obstetrical care.

General Surgeons

Workforce patterns for surgeons echo that of other specialties with an adequate, but poorly distributed, supply. With .075 general surgeons per 10 000 population, North Carolina has more general surgeons than the US average (0.60) or other southern states (0.64) but between 2000 and 2005 more than half (53) of North Carolina counties experienced a decrease in the supply of surgeons relative to population and 5 counties lost all their general surgeons. Seventeen counties had no general surgeons in either 2000 or 2005. General surgeons are a difficult specialty to study from a workforce planning perspective because although they are trained to provide a wide range of surgical services, general surgeons tend to narrow their scope of practice over time in response to the demands exerted by the rapid growth of medical knowledge, patients in their practice, and personal factors.⁴ More research is needed to better understand and monitor the supply of general surgery services in the state.

Psychiatrists^v

North Carolina is currently in the process of redesigning the way mental health services are delivered. As the provision of mental health services is divested from centralized agencies to community settings, it is crucial to know whether there will be practitioners to care for patients at the community level. While a broad range of professionals treat individuals with mental health disorders, a subset of patients requires consultation and pharmacological treatment by psychiatrists. The overall supply of psychiatrists in the state has been keeping pace with population and North Carolina ranks 20th in the nation with a ratio of 1.05 psychiatrists per 10 000 population. However, two thirds of North Carolina counties lost psychiatrists relative to population growth or had no psychiatrists between 1999 and 2004.

Examining the supply of psychiatrists relative to primary care physicians is another important perspective from which to examine the issue because, in the absence of psychiatrists, the burden of diagnosing and managing mental illness will likely fall on primary care physicians who may also be in shortage. In 2004, 19 counties in North Carolina faced a persistent shortage of primary care physicians; 11 of these 19 counties also had a psychiatrist shortage.

Of more concern than the overall supply of psychiatrists is the shortage of child psychiatrists in the state. A recent study of North Carolina pediatricians found that about 15% of children had a behavioral disorder such as attention deficit disorder, anxiety, or depression.⁶ While PCPs can diagnose and treat many common childhood mental illnesses, a child psychiatrist is needed for more complex cases. In 1995, the state had 102 physicians reporting a primary specialty in child psychiatry but this number dropped to 91 in 2005. During the same period, the population 18 years and younger grew by 21%. The net effect of these trends was that the ratio of child psychiatrists per 10 000 population aged 18 years and younger dropped 26% (from .55 to .41). Distribution is also a problem—in 2004, 43 counties had no child psychiatrists and another 42 counties had less than one full-time-equivalent.^e

So What? Crafting Policies to Address Shortage Issues

The shortage of child psychiatrists is acute and action needs to be taken to increase supply and improve distribution. The long-term ramifications of not taking action will be deleterious for the health care system due to the increased use of mental health services in the future as children who have had suboptimal or no psychiatric care mature. It also may have personal costs for children and their parents and societal costs if children are not able to reach their potential due to a lack of access to mental health care. Options include increasing the number of child psychiatry positions in North Carolina residency training programs and placing these positions in community-based teaching sites in rural and underserved communities. The thorny issue of reimbursement must also be addressed. Given that many North Carolina rural communities face both a shortage of primary care and psychiatric physicians, private and public payers need to reimburse for face-to-face and telemedicine consultations between the two practitioner groups. Resources also need to be devoted to developing innovative models of interdisciplinary care that do a better job incorporating nurse practitioners and physician assistants with mental health competencies into the psychiatric workforce team.

With the exception of child psychiatrists, North Carolina's current supply of primary care and specialty practitioners is adequate to meet population needs but there is a maldistribution of practitioners across the state. Rural counties that have traditionally fared poorly in the competition for practitioners appear to be worse off now than in the past and the existing maldistribution will be exacerbated as the overall physician supply tightens. To reverse this trend, decision makers must focus attention not only on high visibility options such as developing new or satellite medical schools, but must also consider a broad range of policy interventions to encourage and support rural practice. Strategies that address the maldistribution by increasing overall supply rely on a "trickle down" assumption that practitioners will diffuse

e Data include primary, secondary and tertiary practice locations for physicians reporting a primary specialty in psychiatry.

across geographic areas. Although research supports a general diffusion of practitioners from urban to rural areas,^{7,8} past experience has shown that more direct policy action is needed to locate practitioners in underserved areas. Resources need to be invested in placing training programs and clinical rotations in underserved areas of the state because practitioners are more likely to settle near where they train. Financial incentives need to be crafted that not only encourage physicians to move to

rural areas but to remain there as well. Loan repayment has proven an effective tool in recruiting physicians to rural areas,⁹ but longer-term strategies to reduce professional isolation and workload need to be implemented to address rural physician retention. North Carolina has a well-established history of collaborative action between health workforce stakeholders that makes it well positioned to both digest, and act upon, shortages of primary care and specialty practitioners. **NCMJ**

REFERENCES

- 1 North Carolina Institute of Medicine. Primary Care and Specialty Supply Task Force Report. Durham, NC. In press.
- 2 Data from the North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. University of North Carolina at Chapel Hill.
- 3 Felter K. Analysis conducted using hospital discharge data (NEED BETTER REFERENCE-MARK??)
- 4 Stitzenberg KB, Sheldon GF. Progressive specialization within general surgery: Adding to the complexity of workforce planning. *J Am Coll Surg*. 2005;201(6):925-932.
- 5 Fraher E, Swartz M, Gaul K. *The Supply and Distribution of Psychiatrists in North Carolina: Pressing Issues in the Context of Mental Health Reform*. 2006. http://www.shepscenter.unc.edu/hp/Psychiatrist_Brief.pdf Accessed April 15, 2006.
- 6 Williams J, Klinepeter K, Palmes G, Pulley A, Foy JM. Diagnosis and treatment of behavioral health disorders in pediatric practice. *Pediatrics*. 2004;114(3):601-606.
- 7 Ricketts TC, Randolph R. Urban-Rural Flows of Physicians. Presented at the International Medical Workforce Conference; March 2007; Vancouver, BC.
- 8 Newhouse JP. Geographic Access to Physician Services. *Annual Review of Public Health*. 1990;11:207-230.
- 9 Pathman DE, Konrad TR, Taylor DH, Koch GG. Outcomes of states' scholarship, loan repayment, and related programs for physicians. *Med Care*. 2004;42(6):560-568.

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