

Shaping Health Workforce Policy Through Data-Driven Analyses: The North Carolina Health Professions Data System

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There is growing concern among North Carolina's policymakers that the state's supply of health professionals may not be adequate to meet future demands. Decisions about whether to enact or change policies directed at training, recruiting, and retaining health professionals affect a wide range of stakeholders and can be the source of contentious debate. For example, an important proposal considered by the North Carolina General Assembly in the 2007 legislative session was the development of a new dental school. The House Select Committee on Health Care Subcommittee on Healthcare Workforce reviewed extensive data analyses describing the supply of dentists.

The ability of legislators, legislative staff, and policy makers to understand, consider, and debate pressing issues and potential policy solutions depends on their access to ready sources of rich data and researchers who can work with the data to objectively present the analyses. One such resource in North Carolina is the North Carolina Health Professions Data System.

In partnership with the North Carolina Area Health Educations Centers (AHEC) Program and 12 state licensing bodies, the North Carolina Health Professions Data System (HPDS) maintains licensure files for 20 health professions and has continuous data for most of these professions dating back to 1979. Through consistent annual reports, analysts are able to monitor the supply of health professionals and detect new trends as they emerge. Further, interested stakeholders frequently use the HPDS data when debates about workforce issues surface. Finally, workforce policy experience has enabled HPDS analysts to identify emerging issues in the supply of unlicensed health professionals that are important to health care delivery as well as to the health of the state's economy.

The North Carolina Health Professions Data System

The NC Health Professions Data System contains a broad array of information on a variety of licensed health professionals. In 2006 the HPDS included data on 20 different licensed professions. (See Table 1.) The inventories include physicians and nurses as well as professions with fewer members such as podiatrists and occupational therapy assistants. The NC Health Professions Data System annually produces the "Orange Book,"

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an annual report of the state of North Carolina's health professions as well as maps depicting the supply of professionals across the state. Administratively located within the Cecil G. Sheps Center

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Table 1.
Professions Included in the 2006 NC Health Professions Data System Data Files

Physicians	Chiropractors
Primary Care Physicians	Occupational Therapists
Physician Assistants	Occupational Therapy Assistants
Nurse Practitioners	Optometrists
Certified Nurse Midwives	Podiatrists
Registered Nurses	Practicing Psychologists
Licensed Practical Nurses	Psychological Associates
Dentists	Physical Therapists
Dental Hygienists	Physical Therapist Assistants
Pharmacists	Respiratory Therapists

for Health Services Research, the HPDS is supported by the North Carolina Area Health Education Centers (AHEC) and the University of North Carolina at Chapel Hill Office of the Provost. Consistent with the university system's increasing commitment to community engagement, the HPDS routinely provides communities with local health professional data; these data are used for multiple purposes such as grant applications and local government priority setting. North Carolina residents highly value the HPDS as a resource; in 2007 the HPDS responded to over 200 data requests from the public.

The data available in the HPDS legally remain the property of the licensing boards that provide the data to the HPDS under a joint agreement allowing HPDS analysts to use the data for research and public policy purposes but restricting use of the data to very specific applications. This agreement maintains the security and privacy of the data. Available data in the system vary widely depending on the specific profession and the license renewal form. Although other data sources provide data on North Carolina's supply of some health professions, these sources typically contain less information, are updated in a less timely manner, or contain only a sample of professionals.

Monitoring Trends

By monitoring annual changes in the supply of health professionals in the state and in comparison to national trends, HPDS analysts are able to identify trends that merit special attention. For example,

based on data from 2000 to 2004, researchers became concerned that North Carolina's past experience of robust growth in physician supply relative to population was slowing. This realization prompted the North Carolina Institute of Medicine (NC IOM) to convene a year-long task force to examine the state's physician supply and recommend options to address the projected shortage.

Using the HPDS data to examine the supply and practice characteristics of physicians, physician assistants, nurse practitioners, and certified nurse midwives, researchers developed a model that projected the future supply of providers relative to the projected growth in North Carolina's population. Figure 1 shows this projection from 2004 to 2030.

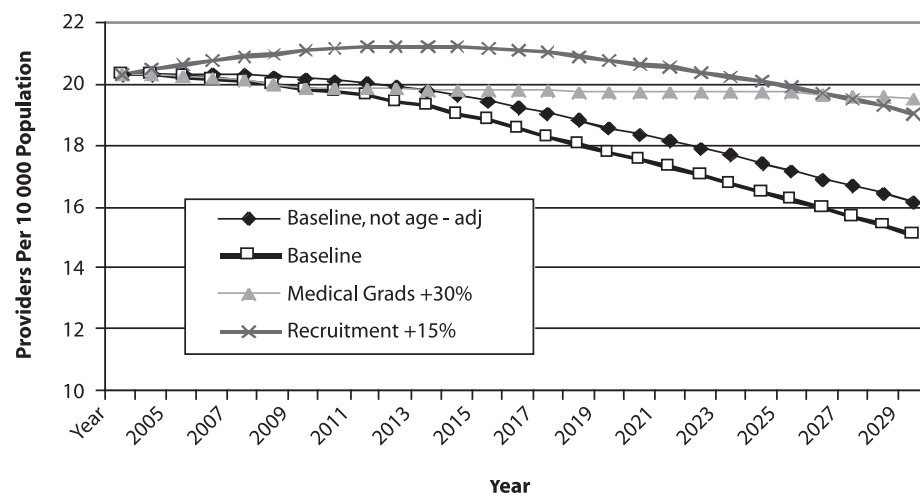
The model incorporated historical migration and retirement patterns available from the HPDS data and projected the effect of different policy options (eg, increasing the number of medical graduates, recruiting more physicians from out of state, increasing productivity through new models of care). The model allowed the NC IOM to test the impact of a variety of policy scenarios on provider supply. The model revealed that, if nothing changes, the state will face a decreased supply of providers in the near future.

Without the long, uninterrupted, historical time series of physician data, the model's ability to project supply would have been more limited. Tom Bacon, DrPH, director of the North Carolina AHEC Program, and a member of the NC IOM task force, described the importance of regular monitoring of supply (February 2008), "With so much attention to workforce policy, it is critical to develop comprehensive data on the location and practice patterns of all types of health care practitioners if we aim to resolve our pressing needs. More fundamentally, without a rich data source on health care practitioner supply, we might not even be aware of the problems."

Informing Workforce Policy Debates

The HPDS is also frequently called upon by institutions or groups when they wish to make the case for a new policy or

Figure 1.
Projected Provider Supply, North Carolina: 2004-2030



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

educational program, or when an issue related to health professionals surfaces in public debate. Data from the HPDS are readily available and equally accessible to stakeholders on all sides of issues; thus, there is no need to undertake expensive one-time studies.

For example, in recent years analyses based on the HPDS have been used to inform debates and proposals regarding:

- New schools of pharmacy, dentistry, and optometry
- The supply of psychiatrists in the context of state mental health reform
- The retention of medical students and residents trained in North Carolina
- Changes in health professionals' scopes of practice
- The effect of malpractice rates on the supply and distribution of obstetric care providers
- The designation of health professional shortage areas
- The supply of health professionals from underrepresented minority groups

Data are also frequently used by researchers and the press to investigate issues related to the distribution, cost, and quality of health care services in the state.

Highlighting New Areas of Workforce Research

In recent years, the HPDS has expanded its workforce analysis capacity to focus more on allied health—a sector of the health care industry that currently faces labor shortages and is likely to grow in the future. The HPDS contains licensure data on dental hygienists, physical therapists, physical therapy assistants, occupational therapists, occupational therapy assistants, and respiratory therapists. However the majority of the allied health workforce is not licensed and assessing the supply of these unlicensed workers can be especially challenging.

To address this challenge, the HPDS has begun an Allied Health Job Vacancy Tracking Project that tracks vacancies through newspaper and online advertisements. While not a definitive measure of demand, the project has proven useful in identifying professions facing acute shortages as well as important differences in the demand for allied health professionals among the state's 9 AHEC regions.

The HPDS allied health workforce research has drawn the attention of state policymakers who are looking for ways to address manufacturing, textile, and furniture job losses in North Carolina. Allied health jobs represent not only a large and increasingly important employment sector in the state but an engine for economic growth as well. Between 1999 and 2005 allied health employment in North Carolina grew much faster than total health care employment and total employment. (See Table 2.) Over 69% of the total job growth in the health care sector between 1999 and 2005 was due to growth of allied health jobs.

Recognizing the growth potential of allied health employment, state policy makers in the Office of the Governor, the legislature, and the Departments of Health and Human Services and Commerce are collaborating with HPDS staff, the state's community college and university systems, health care employers,

Table 2.
Total, Health Care and Allied Health Employment, North Carolina

	1999	2005	% Growth (1999-2005)
Total NC Employment	3 801 670	3 809 690	0.2%
Health Care Jobs	251 550	302 270	20.2%
Allied Health Jobs	76 590	111 630	45.8%

Source: Occupational employment statistics. State cross-industry estimates: 1999-2005. U.S. Department of Labor, Bureau of Labor Statistics Web site. <http://www.bls.gov/oes/>. Accessed June 28, 2006.

Note: Allied Health Jobs are also included in the Health Care Jobs category.

and industry to develop innovative ways to transition unemployed individuals into allied health jobs. The hope is that these efforts will reduce workforce shortages, increase access to health care services, and improve the economic outlook in the state's neediest counties.

Hawley Truax of Governor Easley's Policy Office called the data "crucial" in developing the allied health sector strategy (February 2008). Again, the discovery was somewhat serendipitous, once HPDS staff initially identified the rapidly increasing number of allied health professionals in the data. When this was brought to the attention of the Office of the Governor the strategy quickly developed.

The North Carolina Health Professions Data Systems as a "Neutral" Data Source

Researchers and policy makers in other states have watched what North Carolina has accomplished with its HPDS and have sought out advice and guidance on building their own systems. For example, HPDS staff have assisted North Dakota, Florida, and Missouri in developing similar systems and have offered advice to researchers in at least 6 other states. Other state policy makers have recognized that the objective analysis available from the HPDS uniquely informs North Carolina policy makers and helps ensure that public policy on health workforce issues is based on the best available evidence. Advocates representing opposing sides of an issue will often cite the same HPDS data and interpret it slightly differently. This is a subtle, yet profoundly complimentary statement on HPDS's reputation in the public policy community—opposing sides may disagree on what the data mean, but few disagree with the quality of the data. In public policy debates, access to a neutral, unbiased data source is the most important tool for building solutions. Without it, public policy may be based on the volume of the argument rather than the quality of the data, and the outcomes may be far less useful than hoped for. **NCMJ**