

TRENDS IN THE SUPPLY OF NURSE PRACTITIONERS AND PHYSICIAN ASSISTANTS IN NORTH CAROLINA, 1990-2001

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Introduction

Over the past twenty years, North Carolina has experienced a population boom and a corresponding increase in health care providers. Since the early 1990s, the number of physician assistants (PAs) and nurse practitioners (NPs) has increased dramatically, both in raw number and in proportion to the number of physicians in the state. Relative to the population, the growth in physician supply since 1990 has been modest compared to NPs and PAs (Figure 1).

This fact sheet examines the supply of NPs and PAs relative to physicians in North Carolina's metropolitan and non-metropolitan counties, and in counties of the state that have persistently been designated as health professional shortage areas.¹ Half (50) of North Carolina's counties are considered persistent health professional shortage areas (PHPSAs) (Figure 2).

PHPSAs are defined in this document as those counties that have been designated as whole or part county health professional shortage areas each year between 1996 and 2001, or in six of the last seven releases of the designations.

Figure 1: Growth of Practitioners per 10,000 Population Relative to 1990

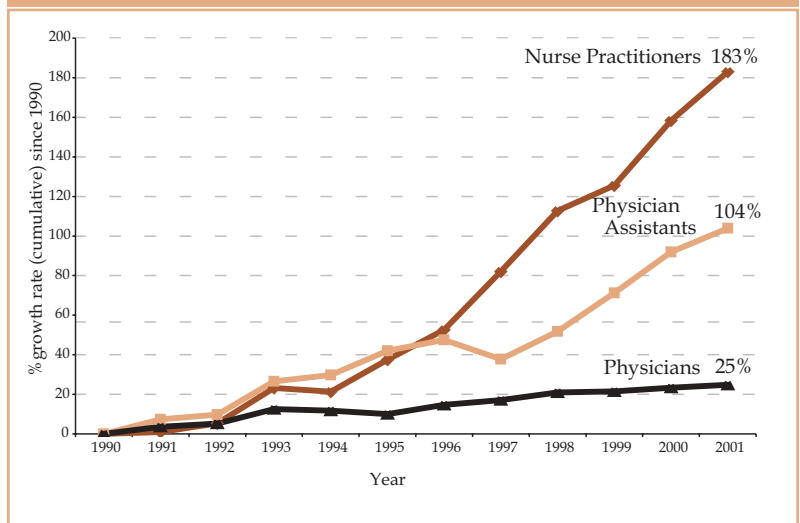
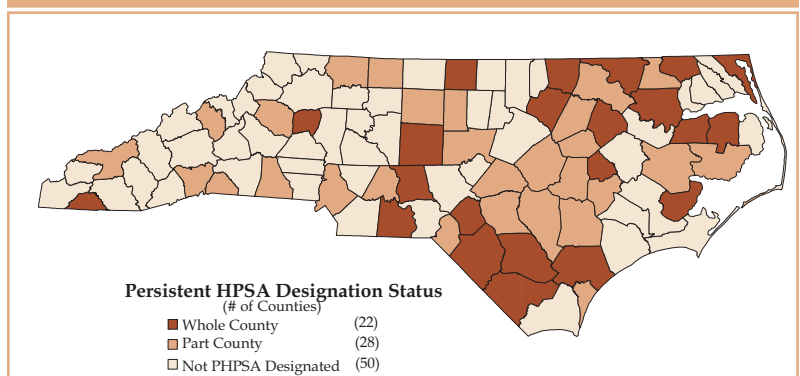


Figure 2: Persistent Health Professional Shortage Areas (PHPSAs) in North Carolina, 2001



Persistent HPSAs are those designated as HPSAs by HRSA from 1996 through 2001, or in 6 of the last 7 releases of HPSA definitions.

Source: North Carolina Health Professions Data System, Area Resource File, HRSA, DHHS, 2002

¹ Note: Professionals are located to their primary practice location. Data do not include secondary locations. Business address was used if practice location was unavailable.

Persistent Health Professional Shortage Areas

In the 22 counties in North Carolina considered whole county PHPSAs, the ratio of nurse practitioners and physician assistants to physicians has increased dramatically since the early 1990s. The ratio of nurse practitioners per 100 physicians in whole county PHPSAs increased from 7 in 1990 to 18 in 2001 – an increase of over 157% (Figure 3). Similarly, the ratio of physician assistants per 100 physicians in whole county PHPSAs grew 50% (from 14 in 1990 to 21 in 2001) (Figure 4). These increases have occurred along with a 67% increase in physicians in whole county PHPSAs over the same time period.

In raw numbers, NP supply increased from 22 to 102, and PA supply increased from 48 to 120 in the years between 1990 and 2001 in whole county PHPSAs. The number of physicians practicing in whole county PHPSAs increased from 338 to 564 during the same time period.

The increase in the supply of NPs and PAs relative to physicians in counties of the state that face persistent difficulties in attracting health professionals may indicate that an increasing amount of patient care is being provided by health professionals other than physicians.

Figure 3: Ratio of Nurse Practitioners per 100 Physicians by PHPSA Status

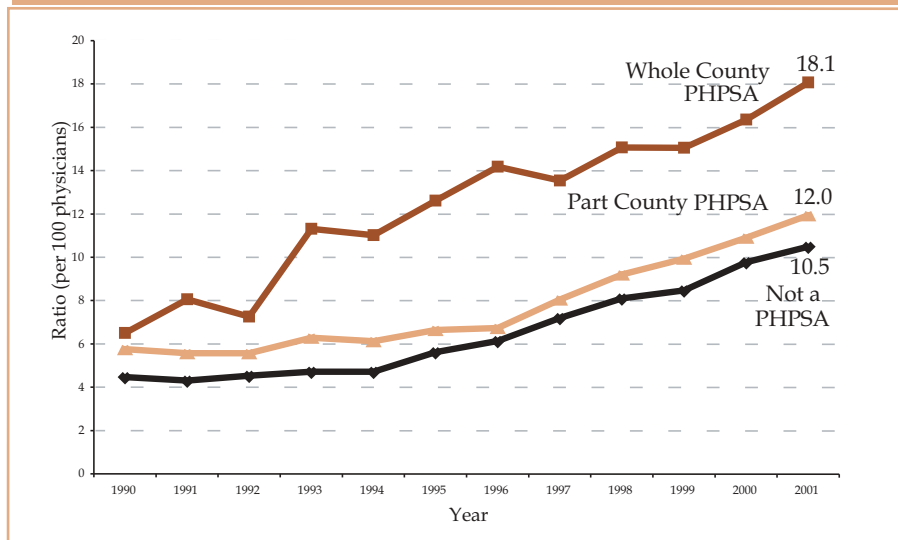
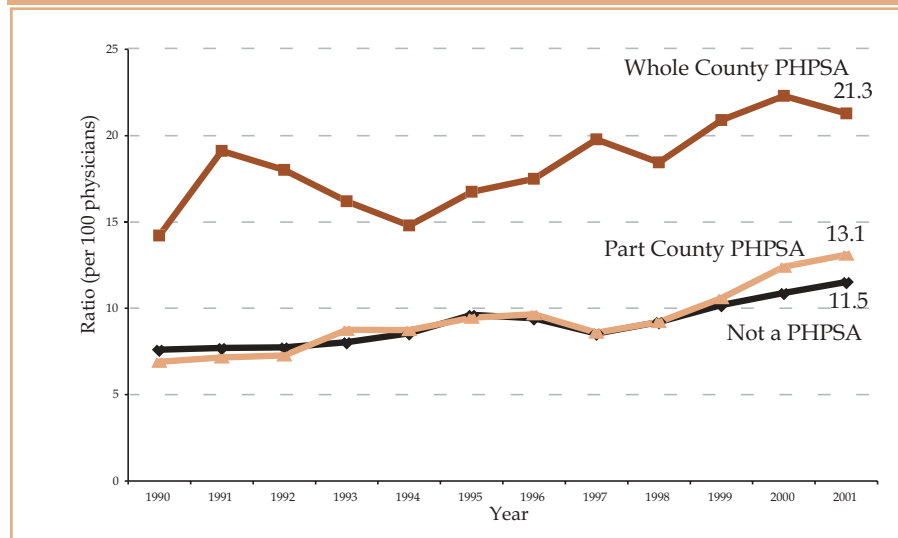


Figure 4: Ratio of Physician Assistants per 100 Physicians by PHPSA Status



Metropolitan vs. Non-metropolitan Counties

Compared to metropolitan areas, non-metropolitan areas have a higher ratio of NPs and PAs to physicians. In 2001, there were 13 NPs per 100 physicians in non-metropolitan counties, compared to 11 per 100 physicians in metropolitan counties (Figure 5). The ratio of PAs per 100 physicians was 14 in non-metropolitan counties, compared to 12 in metropolitan counties (Figure 6). This reverses the trend seen in the early 1990s, when the supply of PAs relative to physicians was about equal in metropolitan and non-metropolitan areas.

The ratio of nurse practitioners per 100 physicians in non-metropolitan counties more than doubled (117%) from 6 in 1990 to 13 in 2001. The ratio of physician assistants per 100 physicians in non-metropolitan counties experienced a similar increase: from 7 in 1990, to 14 in 2001.

The raw number of NPs increased from 133 to 459 (a 245% increase) and PAs increased from 162 to 509 (a 214% increase) in the years between 1990 and 2001 in non-metropolitan counties. The number of physicians increased from 2,251 to 3,538 in those same counties during the same time period. While this is a modest increase, the physician supply is growing at a much slower rate (57% increase) than the NP and PA supply in non-metropolitan areas.

Figure 5: Ratio of Nurse Practitioners per 100 Physicians by MSA Status

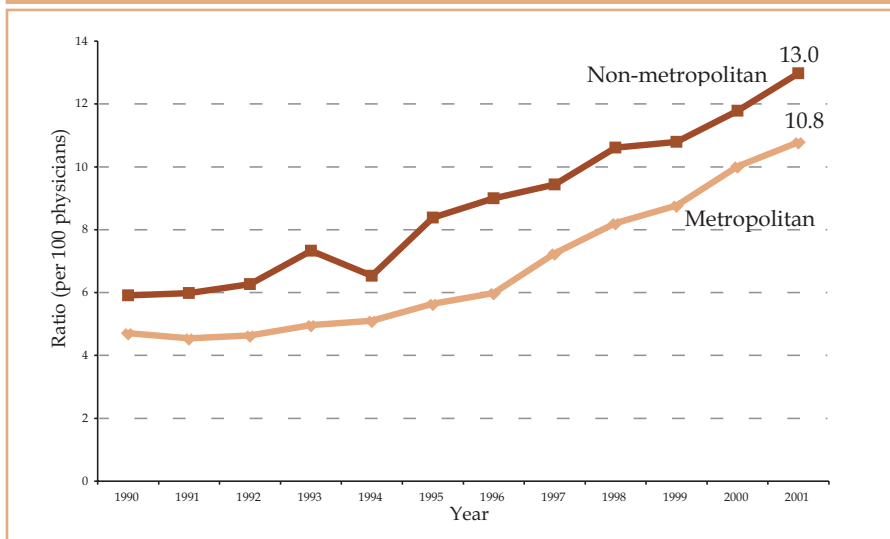
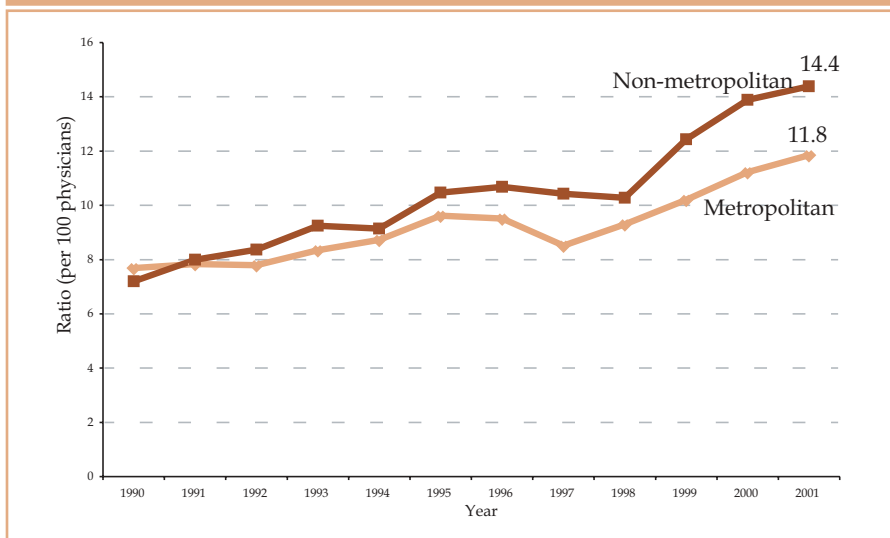


Figure 6: Ratio of Physician Assistants per 100 Physicians by MSA Status



Education and Regulation of Nurse Practitioners and Physician Assistants

Until 1998, there were only two physician assistant education programs in North Carolina, one at Duke University and the other at Wake Forest University. Methodist College graduated its first class in 1998, and East Carolina – the only state-supported university program – graduated its first PA class in 1999. Over the past 11 years, the number of PAs graduating from North Carolina programs increased 81%, from 72 graduates in 1990, to 130 graduates in 2001. While the number of PAs graduating from in-state programs increased steadily until 1999, the supply of new graduates has been relatively constant since then.

One of the first three family NP education programs in the nation was established in North Carolina at the University of North Carolina at Chapel Hill, and was developed specifically for the purpose of preparing NPs to practice in rural parts of the state. Nurse practitioners are currently educated at seven universities in the state, including six state-supported institutions. The number of nurse practitioners graduating from in-state programs has increased dramatically since 1990. In 1990, there were only 40 graduates from North Carolina programs, by 2001 this number had more than quadrupled to 180. The number of NP graduates in the state peaked at 249 in 1997. Although the number of graduates produced by NC programs has decreased since 1997, in-state programs are currently producing more graduates than they were in the early 1990s.

Data on the supply and distribution of NP and PAs need to be interpreted in the context of how these practitioners are regulated in the state. In North Carolina, nurse practitioners are licensed as registered nurses and are jointly approved to practice by the North Carolina Medical Board and the North Carolina Board of Nursing. Physician assistants are regulated by the North Carolina Medical Board. By statute, both NPs and PAs are required to enter into a collaborative practice agreement with a supervising physician. This practice agreement enables NPs and PAs to write prescriptions, compound and dispense drugs, and order medications, tests or treatments in hospitals and other health care facilities. Since practice agreements with physicians are required, the supply and distribution of both NPs and PAs is dependent on both the supply of physicians and the physicians' willingness to enter into collaborative practice arrangements.

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