

Trends in the Primary Care and Specialist Physician Workforce in North Carolina

Erin Fraher, MPP

**Thomas C. Ricketts, Ph.D.; Jennifer King;
Katie Gaul, MA; Hazel Hadley, Mark Holmes, Ph.D.**

University of North Carolina at Chapel Hill

January 13, 2006



Goals for Today's Presentation

- Describe trends in the supply and distribution of:
 - the primary care workforce including physicians, NPs, and PAs; and
 - the specialty workforce, focusing on surgeons, psychiatrists, ob/gyns, and pediatricians
- Examine race/ethnicity of the workforce compared to North Carolina's population.
- Illustrate difference in hours worked per week in patient care by sex and age.
- Begin discussion on measuring need for physicians in NC

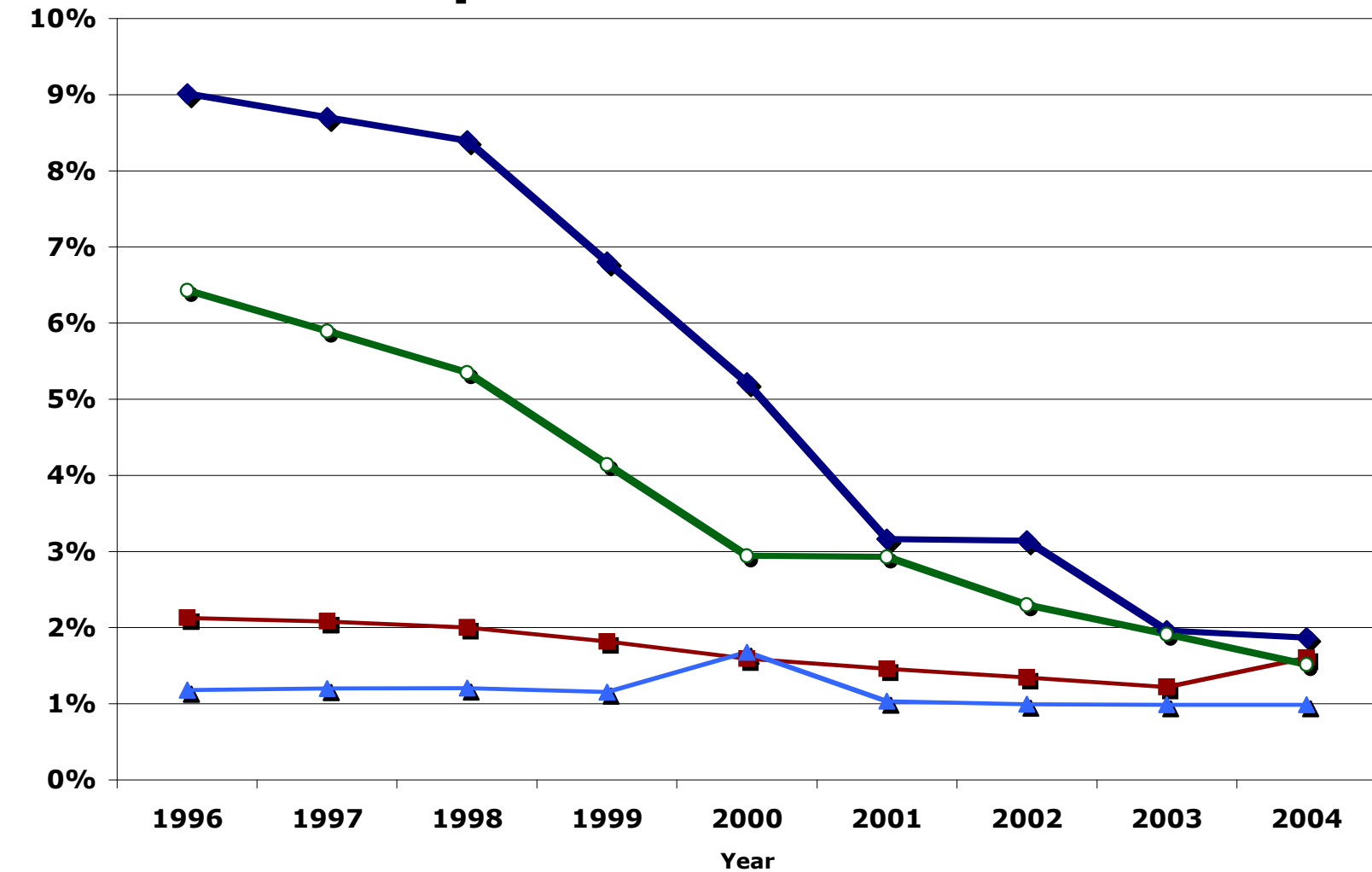
Trends in North Carolina Primary Care Supply



UNC

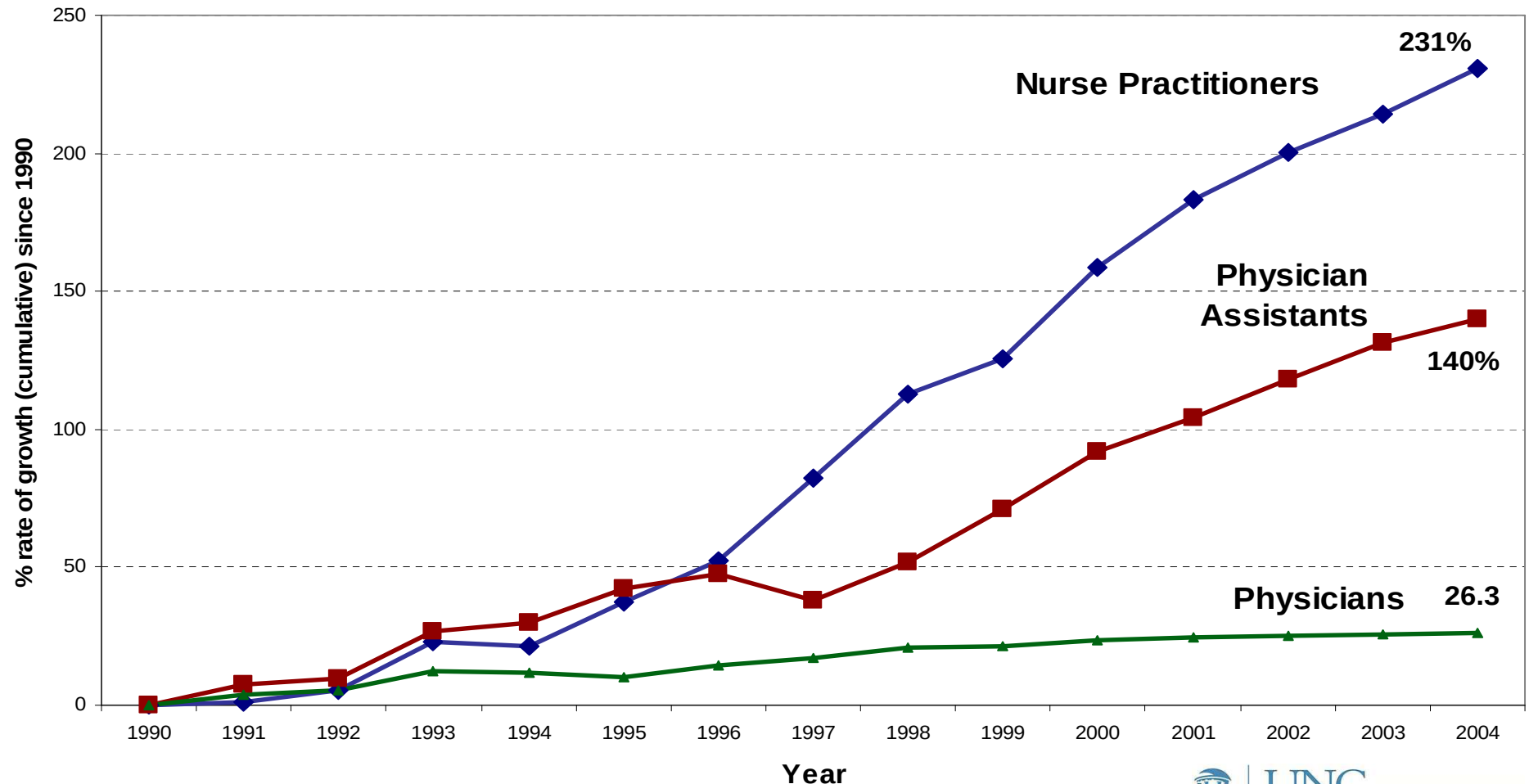
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

MD Growth is Slower than Population Growth

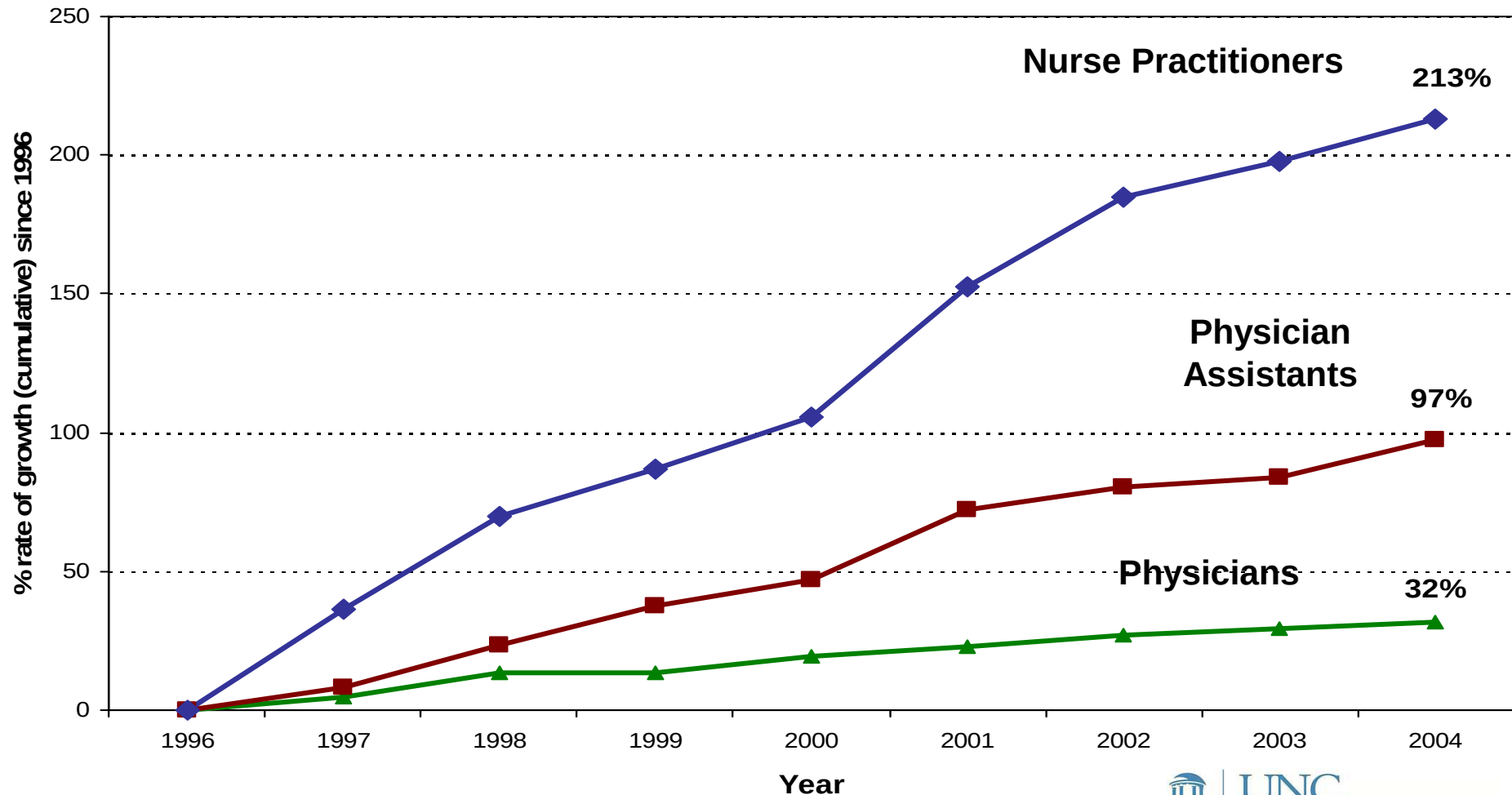


◆ NC Primary Care MDs ■ NC Population ▲ US Population ○ NC Total MDs

Cumulative Growth of Nurse Practitioners, Physician Assistants and Physicians, North Carolina, 1990-2004



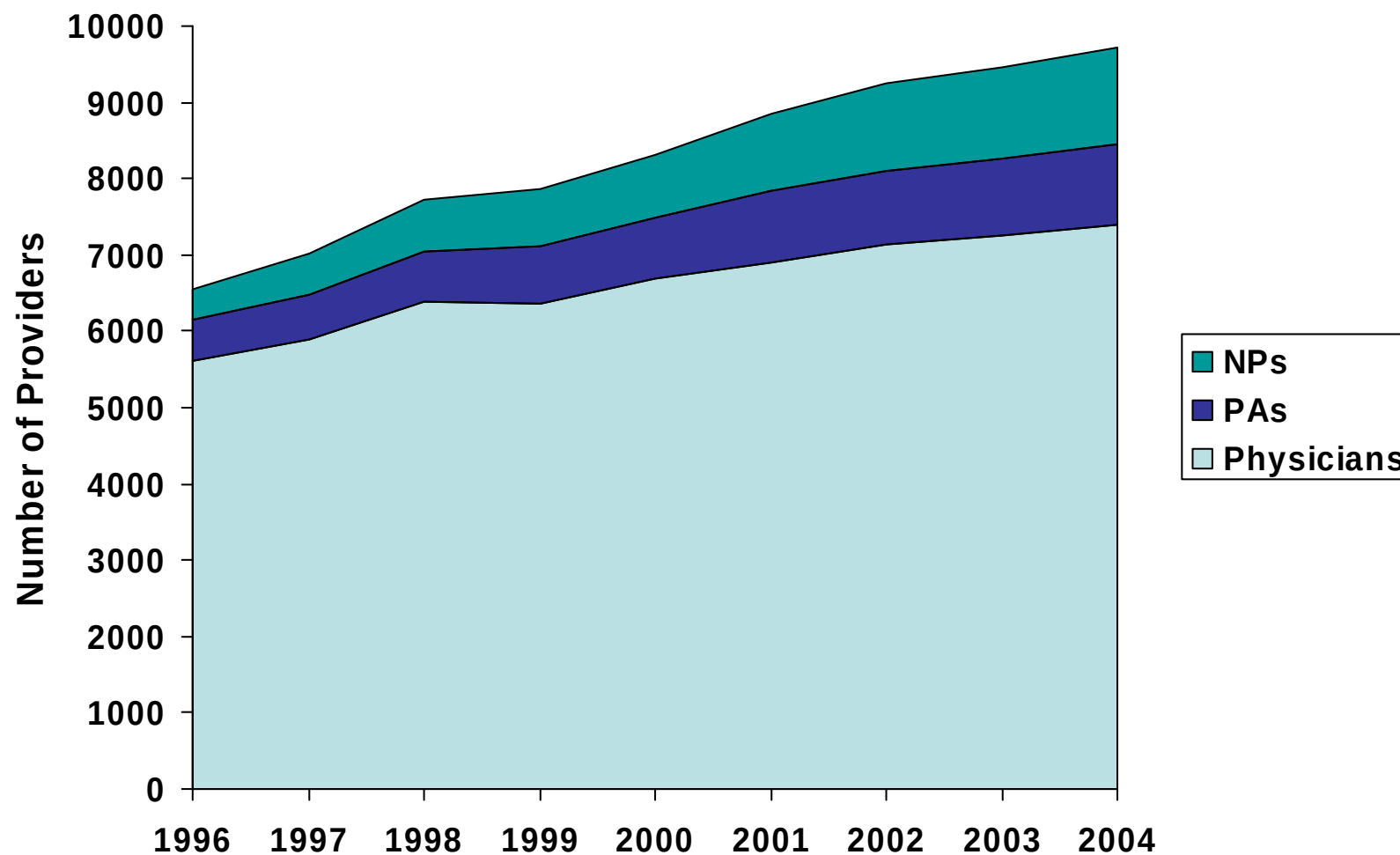
Cumulative Growth of Primary Care Nurse Practitioners, Physician Assistants and Physicians, North Carolina, 1996-2004



PAs and NPs important components of NC primary care supply

- Between 1998 and 2003, rural NC counties gained 464 primary care providers, 53% were either PAs or NPs.
- PA/NPs comprised 22% of total primary care providers in rural counties in 1998 and 28% in 2003.
- In 2003, PAs and NPs accounted for 35% of total primary care providers in whole county HPSAs compared to only 22% of providers in counties not designated as HPSAs.

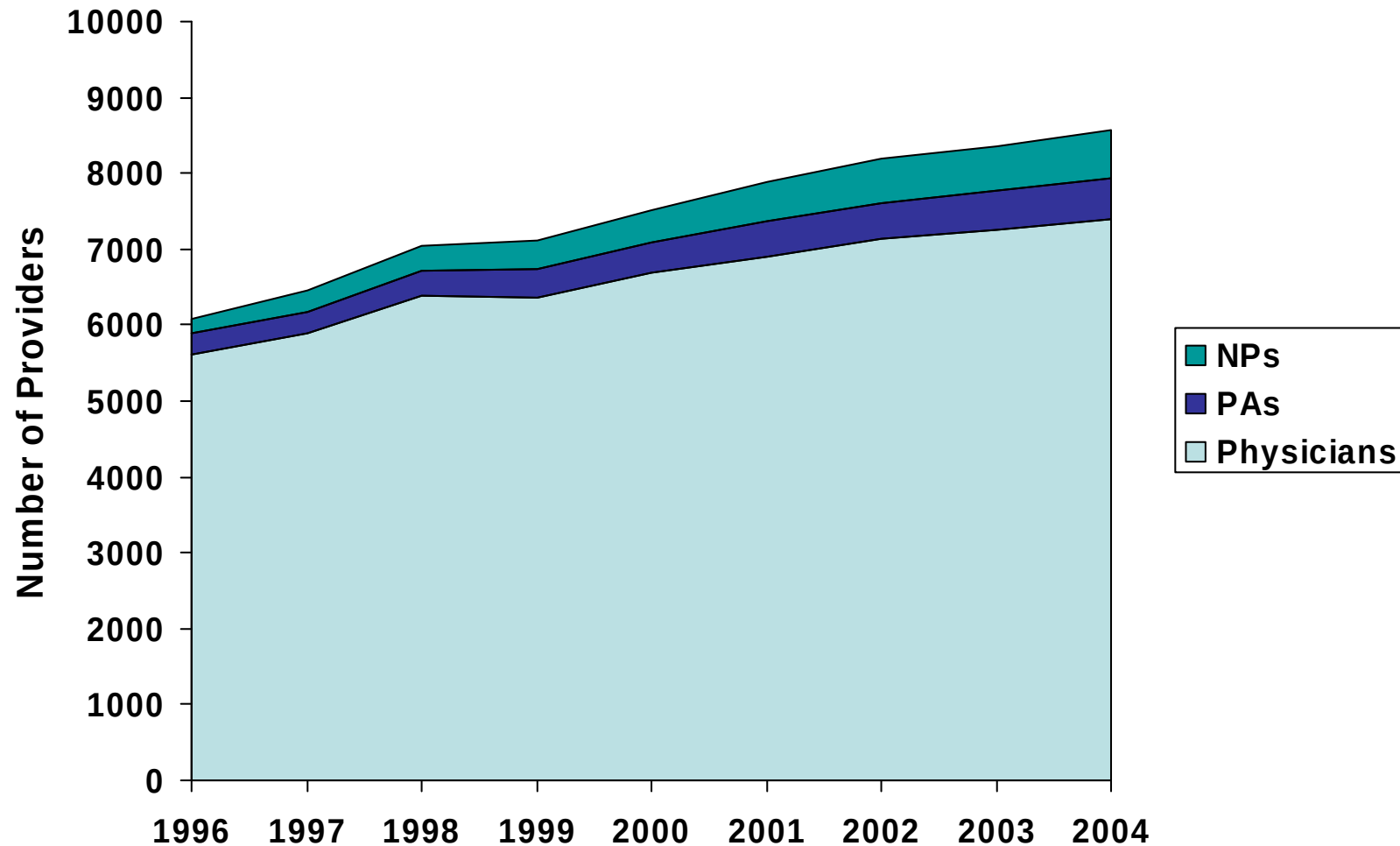
Total NC Primary Care Workforce: Physicians, PAs, NPs



Source: North Carolina Health Professions Data System.

Total NC Primary Care Workforce:

Physicians, PAs, NPs adjusted to Federal FTE Weight



Source: North Carolina Health Professions Data System.

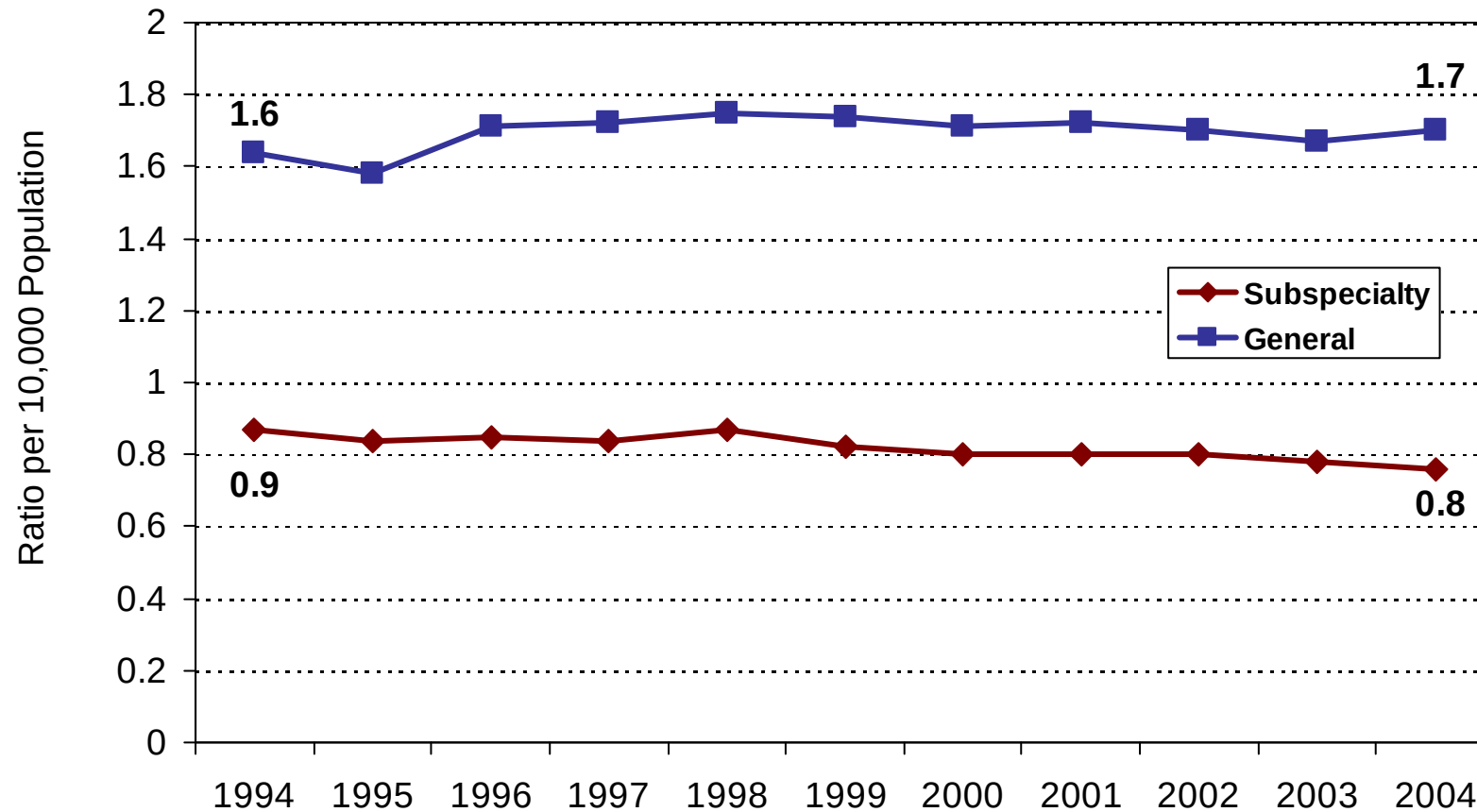
Trends in North Carolina Specialist Supply



UNC

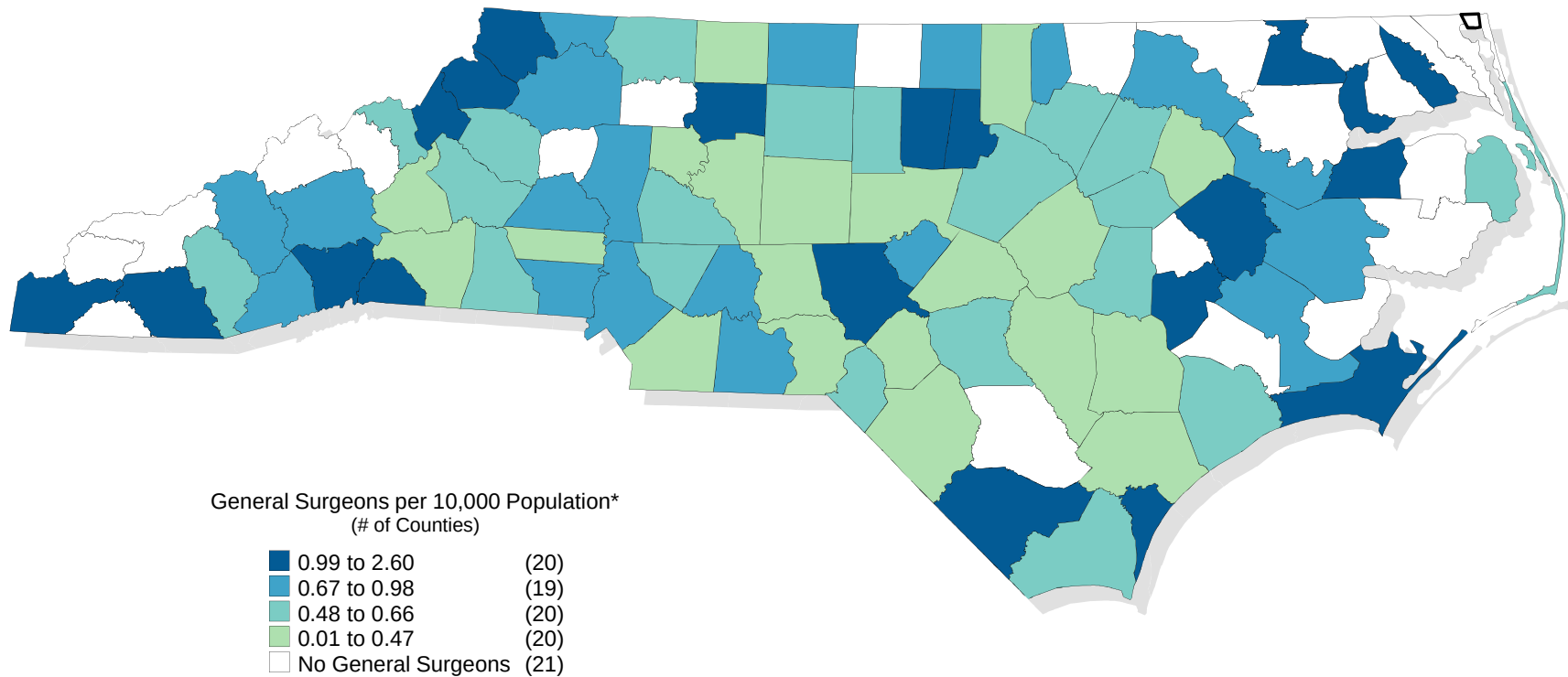
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Surgeons per 10,000 Population, North Carolina 1994-2004



Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board, 1994-2004.

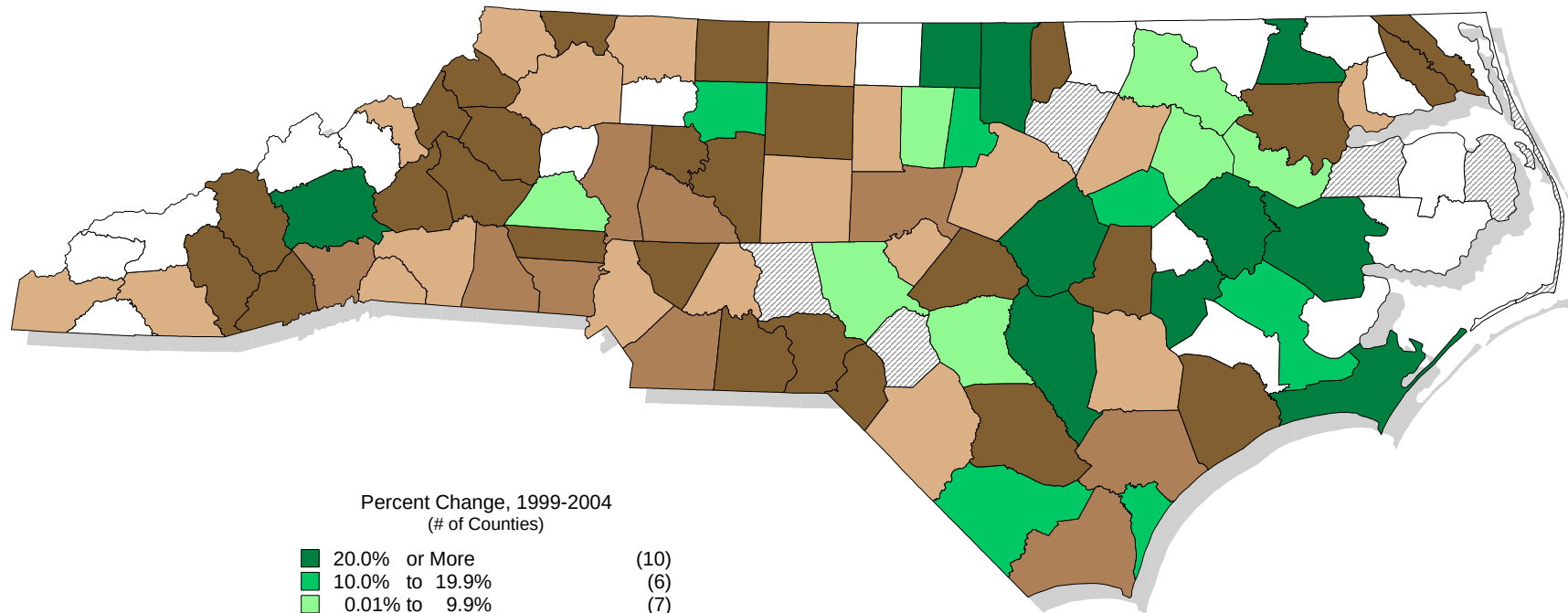
General Surgeons per 10,000 Population North Carolina, 2004



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

*Physicians included are active or have unknown activity status, instate,
nonfederal, non-resident-in-training MDs and DOs. General surgeons
include physicians who reported a primary specialty in general surgery.

Percent Change in General Surgeons per 10,000 Population North Carolina, 1999-2004



Percent Change, 1999-2004
(# of Counties)

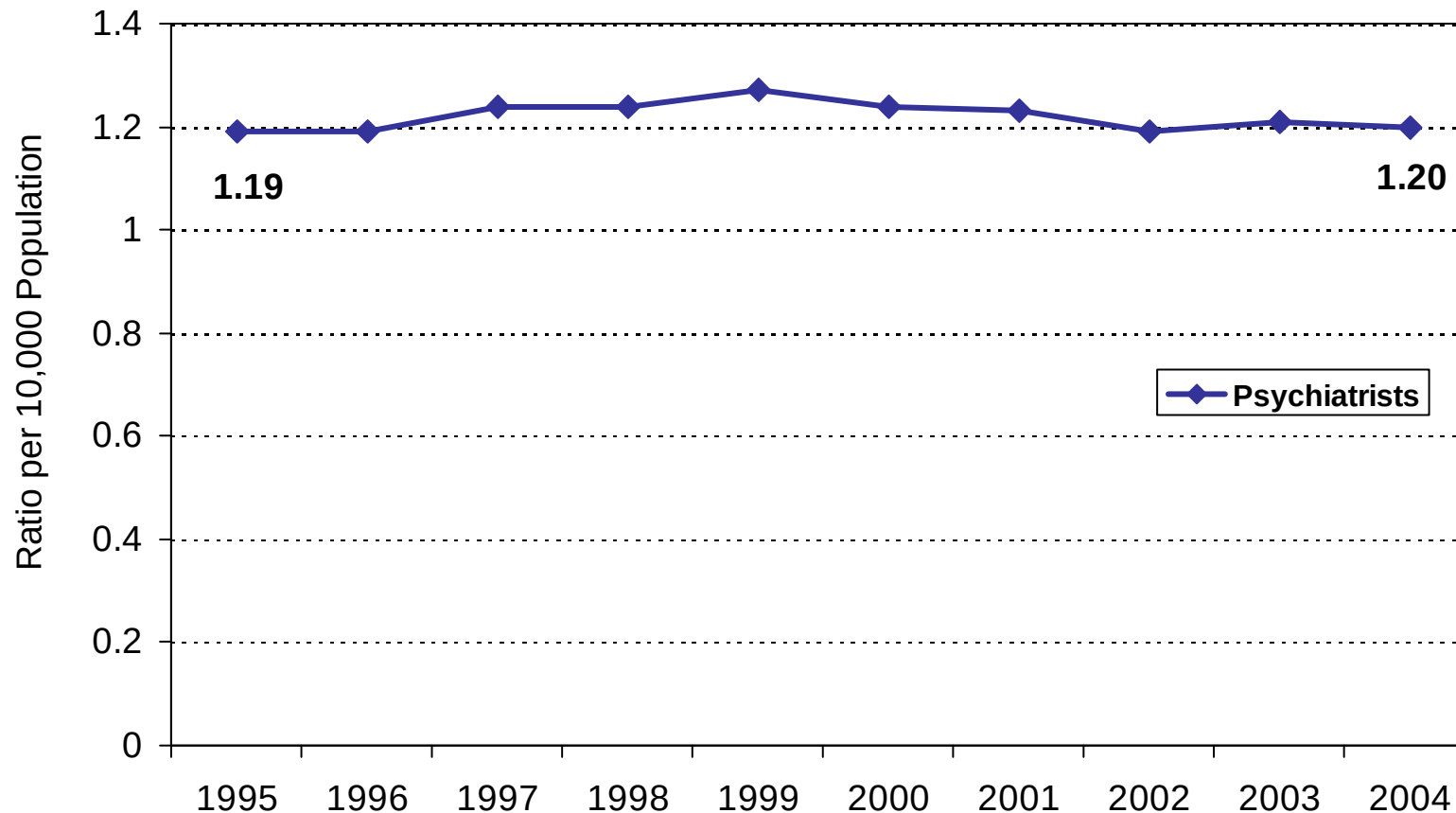
20.0% or More	(10)
10.0% to 19.9%	(6)
0.01% to 9.9%	(7)
-0.01% to -9.9%	(19)
-10.0% to -19.9%	(9)
-20.0% or More	(26)
No General Surgeons in 1999	(5)
No General Surgeons Either Year	(18)

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, 1995-2004.

Counts include active, instate, nonfederal, non-resident-in-training physicians.

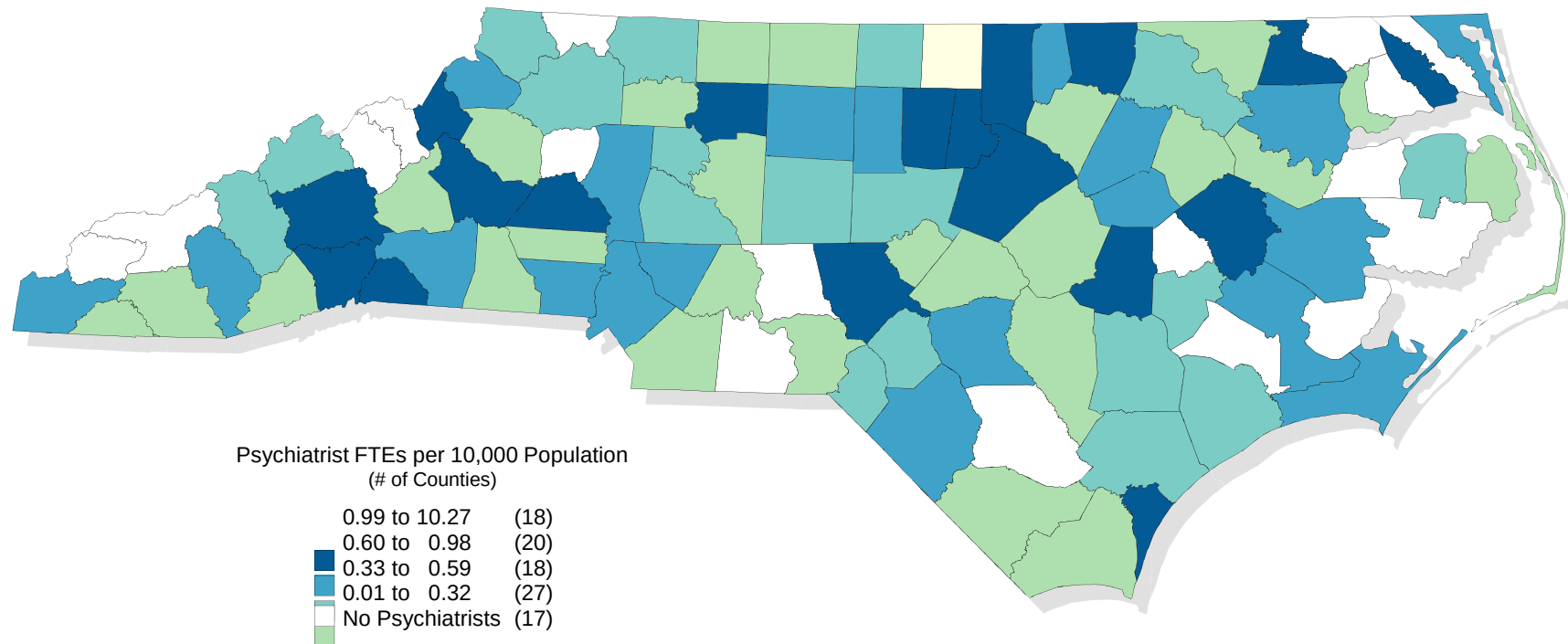
*There were no active General Surgeons in 1999; there were 9 active General Surgeons in 2004.

Ratio of Psychiatrists per 10,000 Population, North Carolina, 1995-2004



Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board. Includes active, instate, nonfederal, nonresident physicians with primary specialty in psychiatry, child psychiatry, psychoanalysis, psychosomatic medicine, addition/chem. dependency, alcohol and drug abuse, hypnosis, forensic psychiatry and geriatric psychiatry. Population data are from the Census.

Psychiatrist Full-Time Equivalents per 10,000 Population North Carolina, 2004



Total Psychiatrists = 1,061

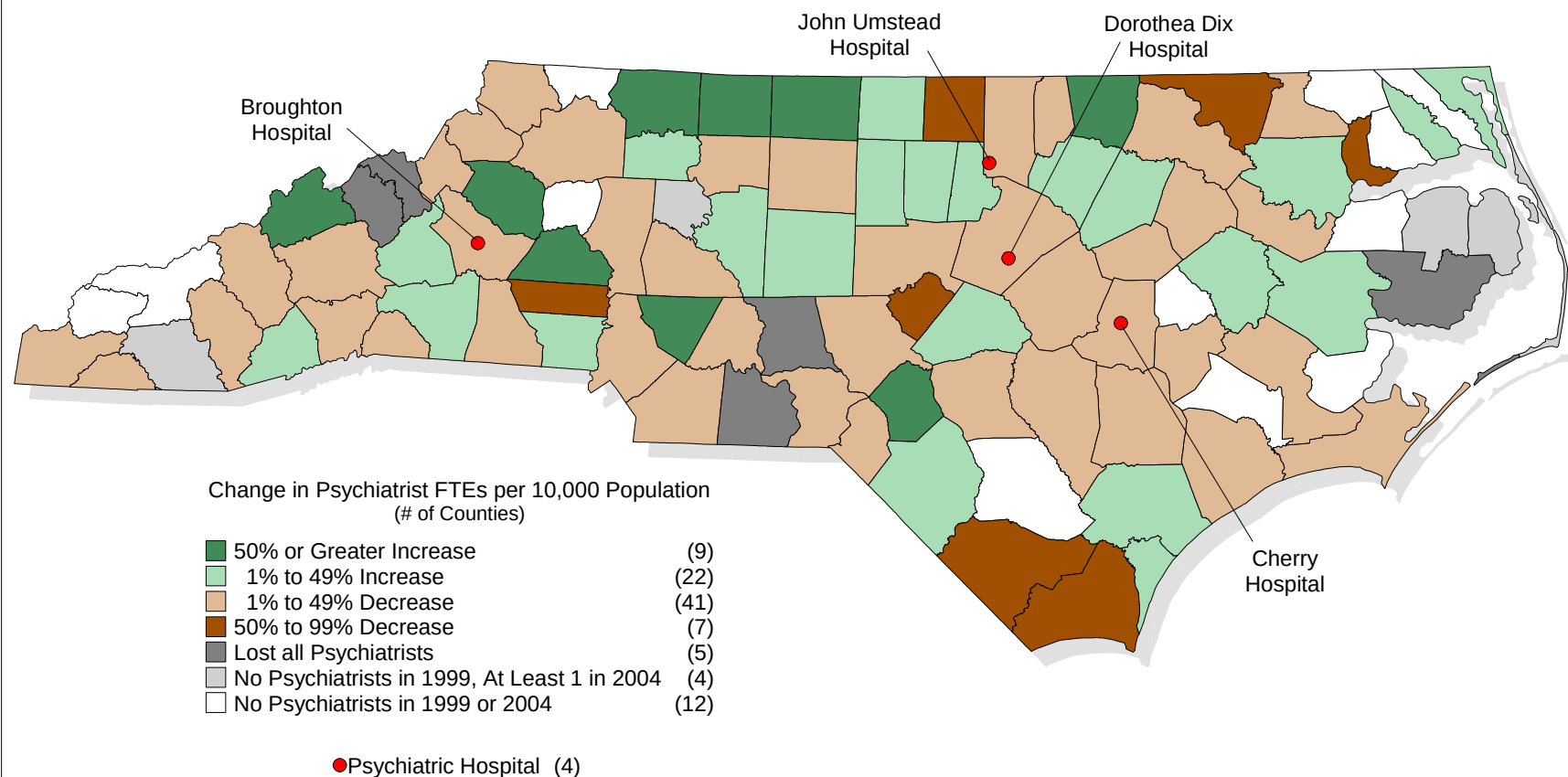
Source: North Carolina Health Professions Data System, with data derived from the North Carolina Medical Board, 2004; LINC, 2005.
Produced by: North Carolina Health Professions Data System and the Southeast Regional Center for Health Workforce Studies, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

*Psychiatrists include active (or unknown activity status), instate, nonfederal, non-resident-in-training physicians who indicate a primary specialty of psychiatry, child psychiatry, psychoanalysis, psychosomatic med, addiction/chemical dependency, forensic psychiatry, or geriatric psychiatry, and secondary specialties in psychiatry, child psychiatry and forensic psychiatry.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Change in Psychiatrist Full-Time Equivalents per 10,000 Population North Carolina, 1999 to 2004



Source: LINC, 2005; North Carolina Health Professions Data System, with data derived from the North Carolina Medical Board, 2004; NC DHHS, MHDDSAS, 2005.

Produced by: North Carolina Health Professions Data System and the Southeast Regional Center for Health Workforce Studies, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

*Psychiatrists include active (or unknown activity status), instate, nonfederal, non-resident-in-training physicians who indicate a primary specialty of psychiatry, child psychiatry, psychoanalysis, psychosomatic med, addiction/chemical dependency, forensic psychiatry, or geriatric psychiatry, and secondary specialties in psychiatry, child psychiatry and forensic psychiatry.

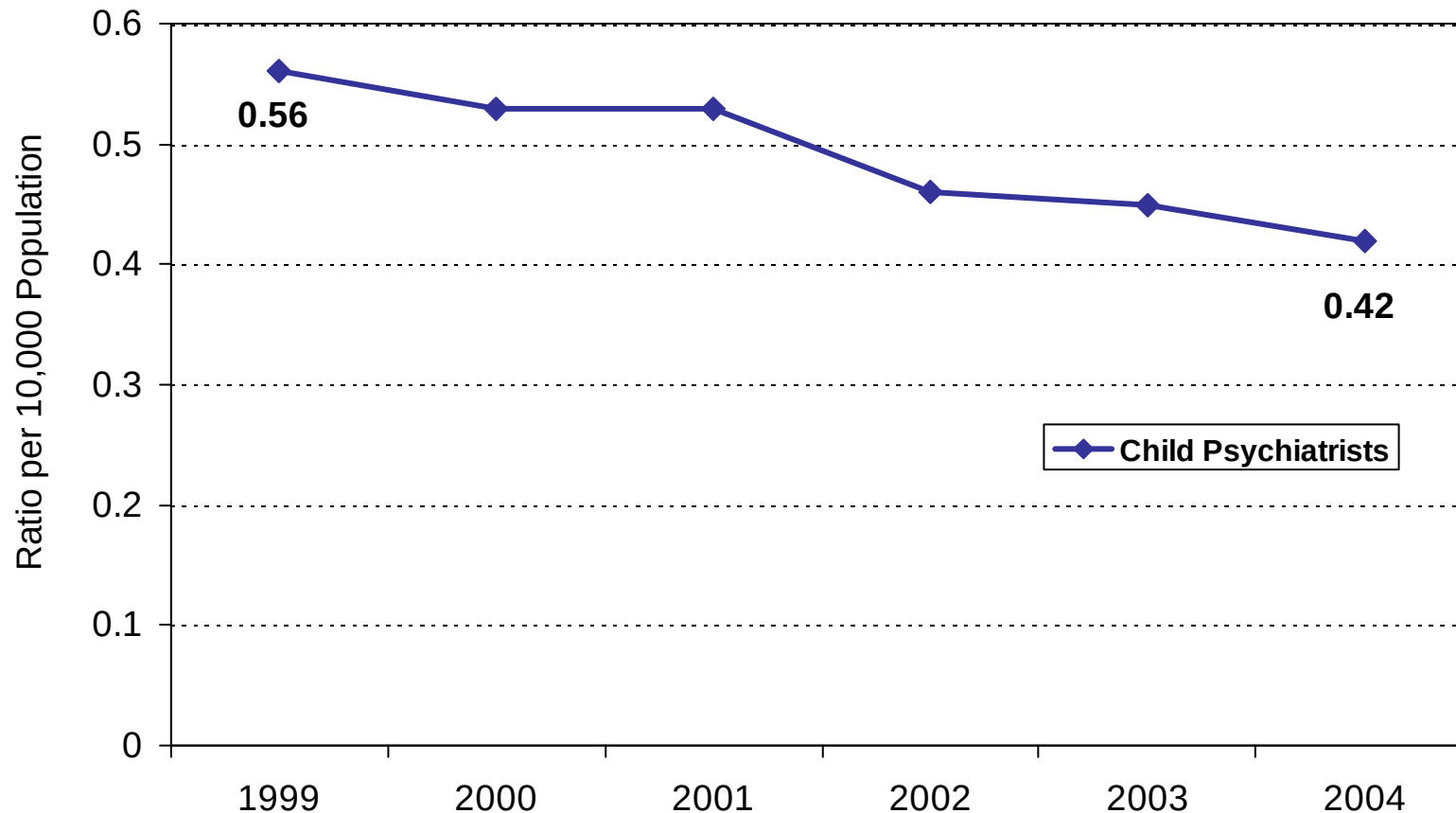
Distribution of Psychiatrists Relative to Primary Care Physicians in Underserved Areas

If there is not an adequate supply of psychiatrists in certain counties and LMEs, the burden of care will likely fall on primary care physicians.

In 2004:

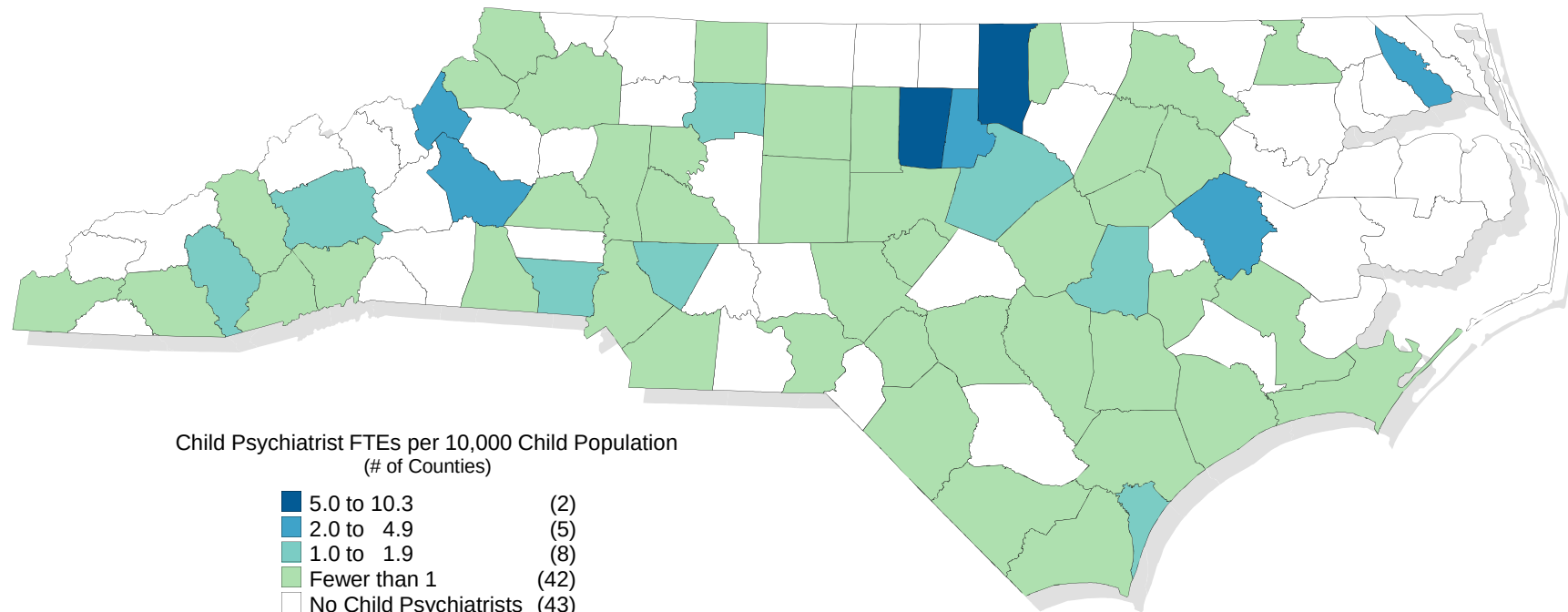
- There were 17 counties in which no psychiatrists claimed a practice location. Seven of these 17 counties were also whole-county primary care HPSAs.
- Of the 19 whole-county primary care HPSAs, 11 face a shortage of psychiatrists

Ratio of Child Psychiatrists per 10,000 Population Age 18 & Under, North Carolina, 1999-2004



Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board. Includes active, instate, nonfederal, nonresident physicians with a primary specialty of child psychiatry. Population data are from the Census.

Child Psychiatrist Full-Time Equivalents per 10,000 Child Population North Carolina, 2004



Total Child Psychiatrists = 223

Source: North Carolina Health Professions Data System, with data derived from the North Carolina Medical Board, 2004; LINC, 2005.

Produced by: North Carolina Health Professions Data System and the Southeast Regional Center for Health Workforce Studies, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

*Child psychiatrists include active (or have unknown activity status), instate, nonfederal, non-resident-in-training physicians who indicate a primary or secondary specialty of child psychiatry. Child population includes children 18 and under.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Trends in Physicians Delivering Babies

	2000	2001	2002	2003	2004
OBGs	919	937	954	960	981
OBGs Delivering	651	701	742	750	748
% OBGs	70.8%	74.8%	77.8%	78.1%	76.2%
FPs	2,173	2,224	2,293	2,327	2,040
FPs Delivering	212	227	228	232	205
% FPs	9.8%	10.2%	9.9%	9.9%	10%



Delivery Dynamics

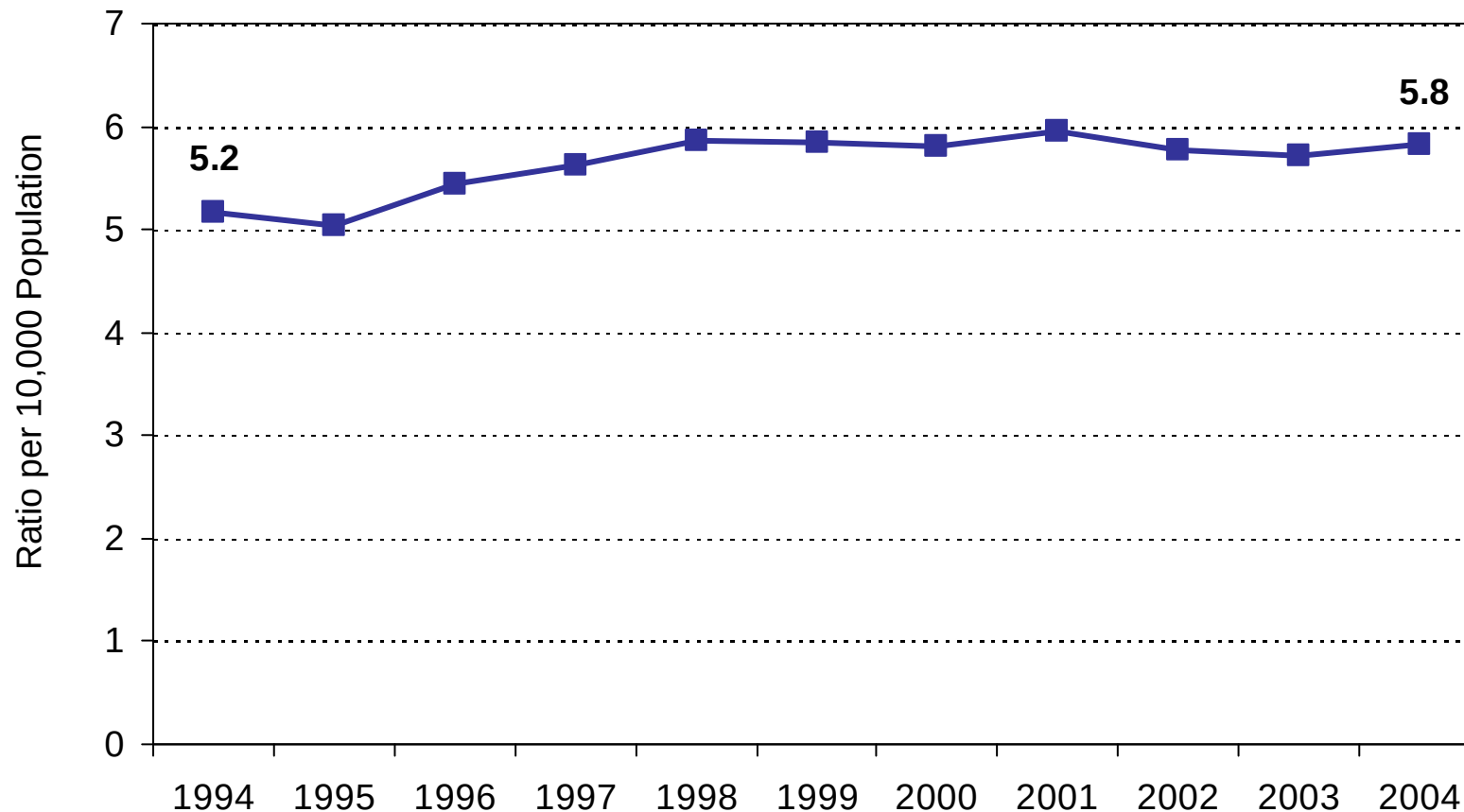
- Of the 101 physicians who stopped providing obstetric deliveries between 2003 and 2004, 56 (56%) were Family Docs.
- This is a disproportionate share since family docs are just 13% of total physicians and 10% of physicians delivering babies.

Balance between births and practitioners, North Carolina, 2000-2004

	2000	2001	2002	2003	2004
Total Professionals Providing Deliveries	1,030	1,100	1,163	1,178	1,148
Live Births	120,245	118,112	117,307	118,292	119,773
Births/ Provider	116.7	107.4	100.9	100.4	104.3

Source: HPDS and NC Vital Statistics

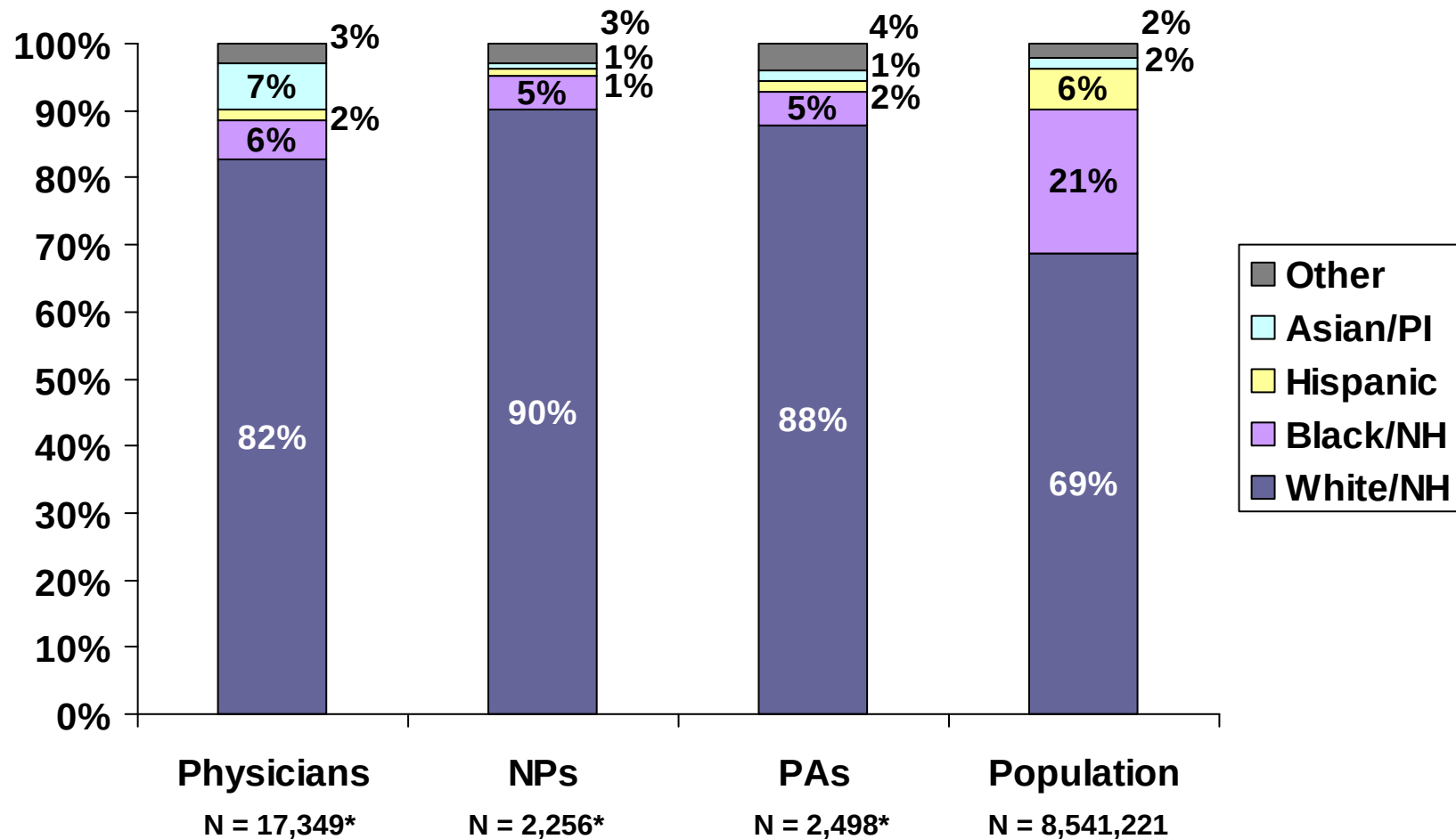
Pediatricians per 10,000 Child Population, North Carolina 1994-2004



Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board, 1994-2004.
Note: Pediatricians include physicians indicating "pediatrics" as their primary specialty.

Racial/Ethnic Composition of North Carolina Health Care Workforce

Race of Population and Providers, North Carolina 2004

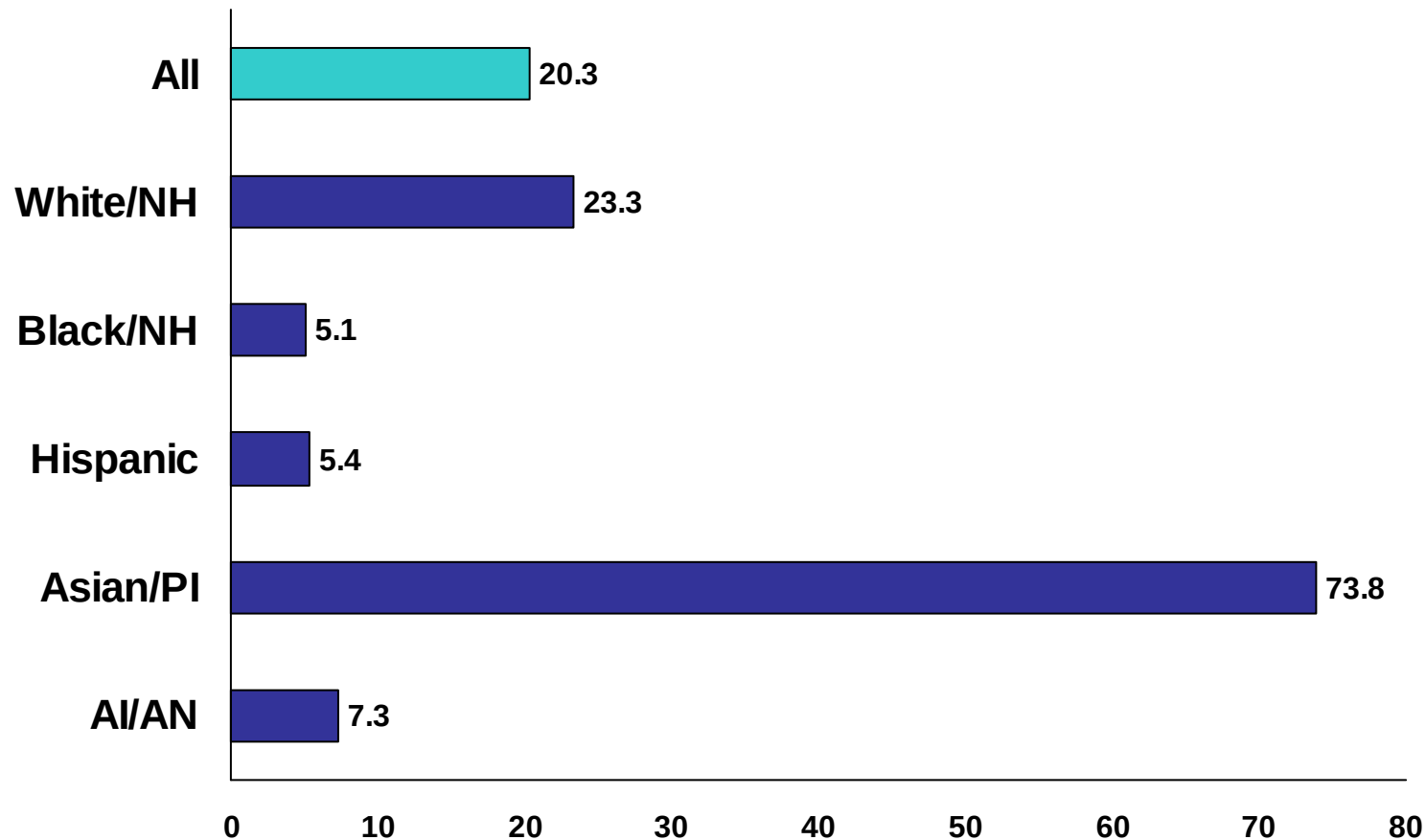


Source: North Carolina Health Professions Data System and US Census. Note: Race data was missing for 604 physicians, 212 NPs, and 215 PAs; percentages are based on the providers for whom race information was available. Other includes American Indian/Alaskan Native and other/mixed race. PI is Pacific Islander.



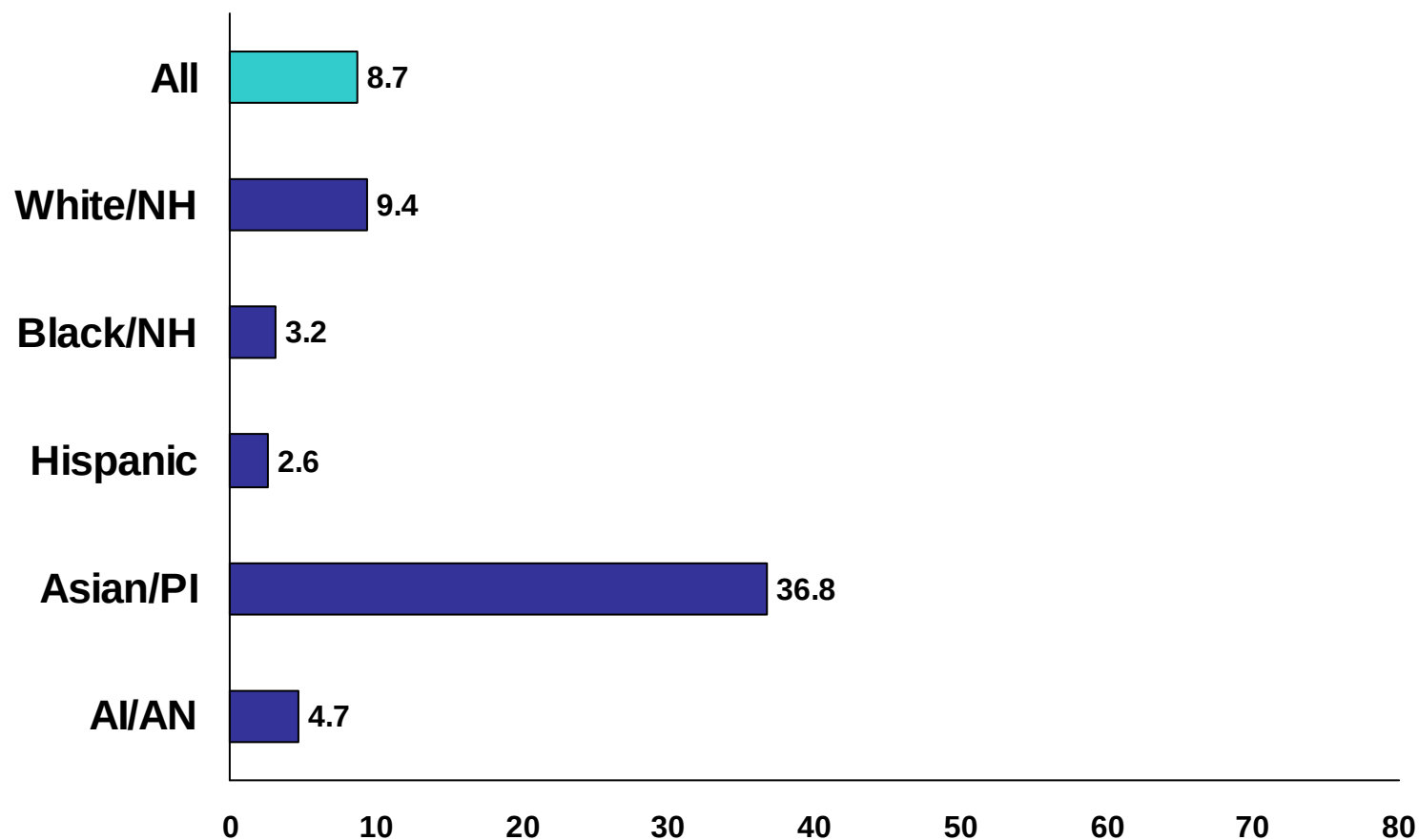
UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Total Physicians per 10,000 Population of the Same Race, North Carolina 2004



Source: North Carolina Health Professions Data System and US Census. Note: Race data was missing for 604 physicians; ratios by race are based on the 16,745 physicians for whom race information was available. AI/AN is American Indian/Alaskan Native; PI is Pacific Islander.

Primary Care Physicians per 10,000 Population of Same Race, North Carolina 2004



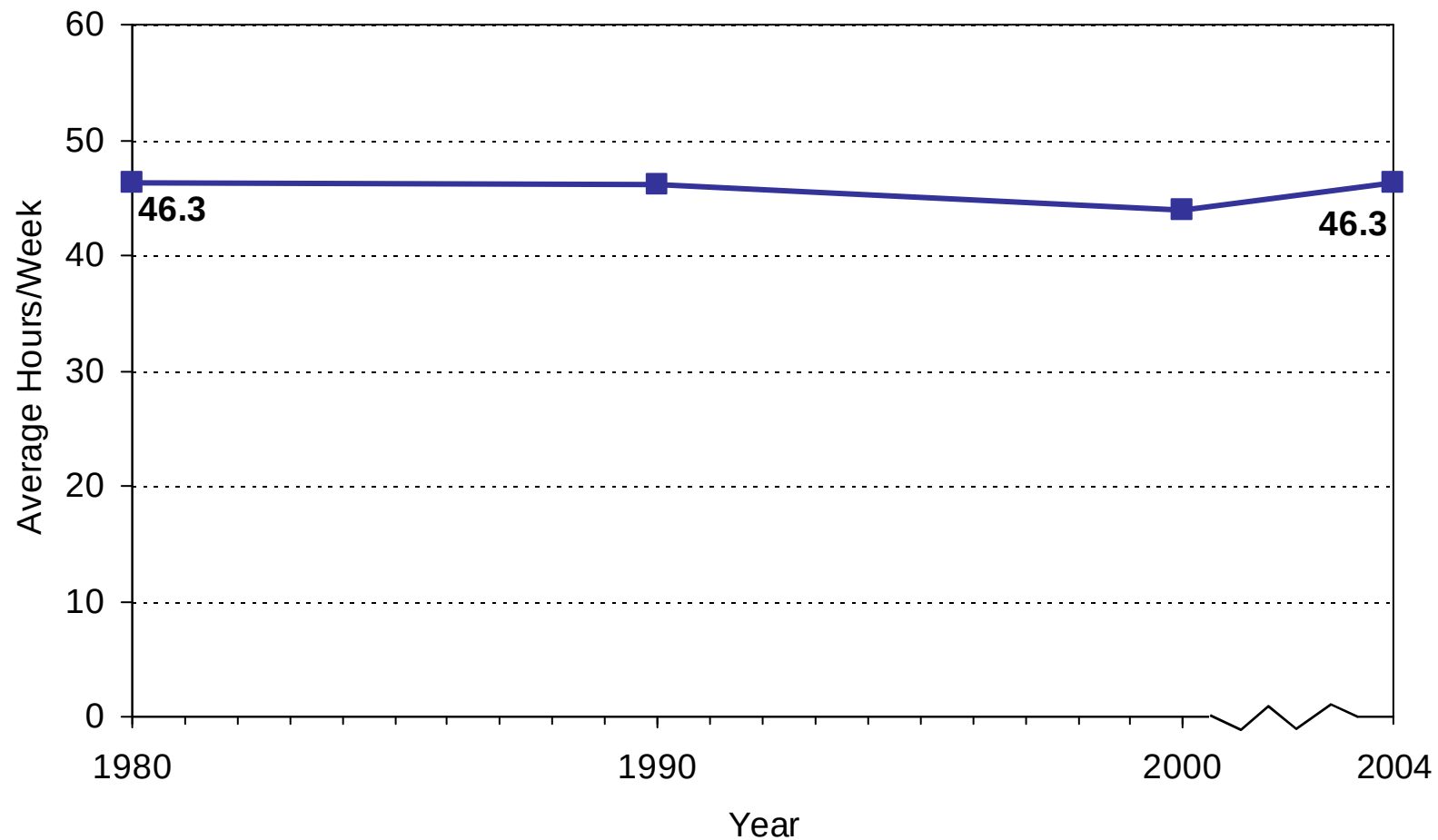
Source: North Carolina Health Professions Data System and US Census. Note: Race data was missing for 281 physicians; ratios by race are based on the 7,120 physicians for whom race information was available. AI/AN is American Indian/Alaskan Native; PI is Pacific Islander.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

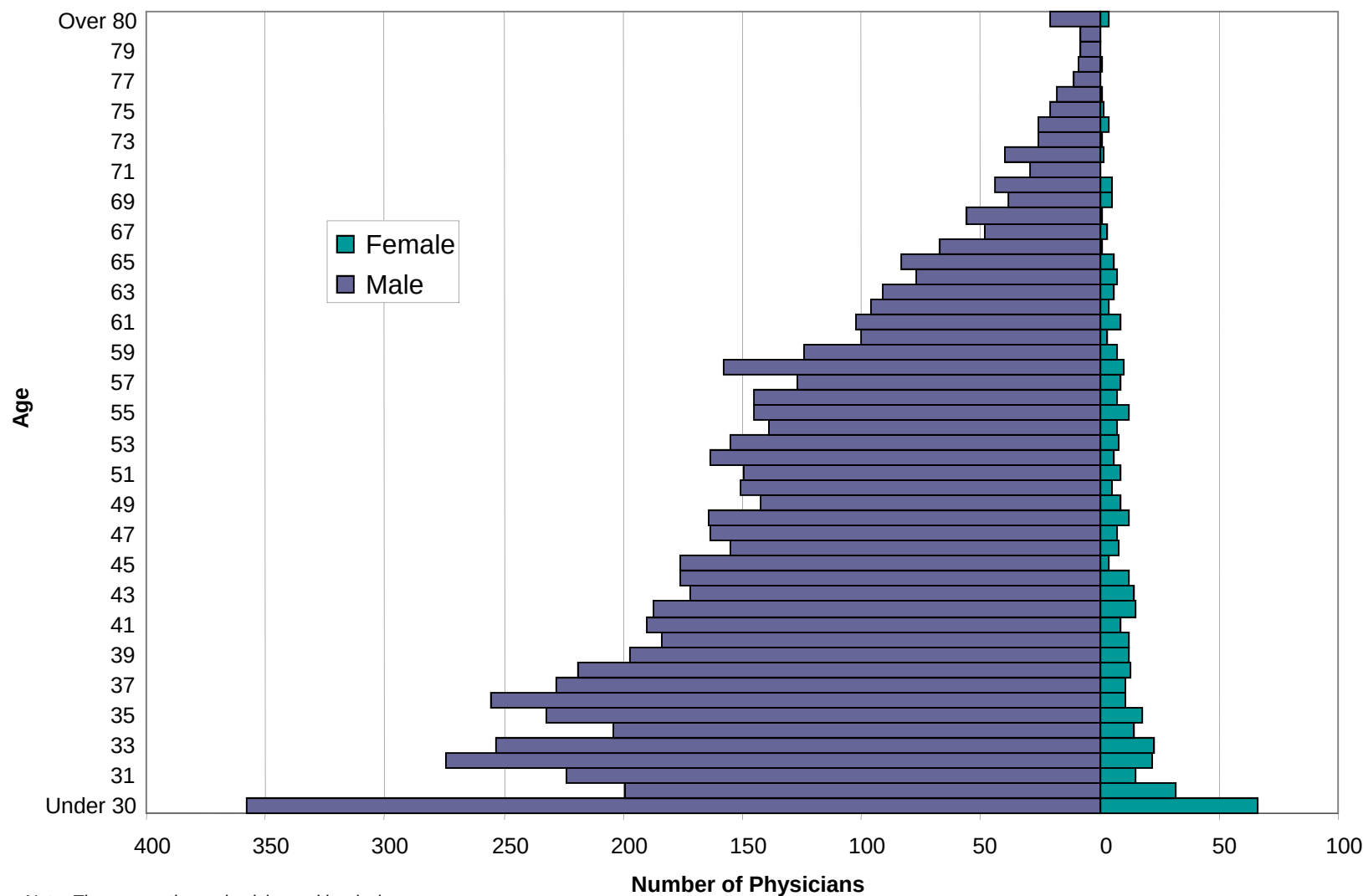
Trends in Physician Work Patterns and Need for Physicians in North Carolina

Average Patient Care Hours/Week Worked by North Carolina Physicians, 1980-2004



Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board, 1980-2004.

Age-Gender Pyramid, Physicians North Carolina, 1980



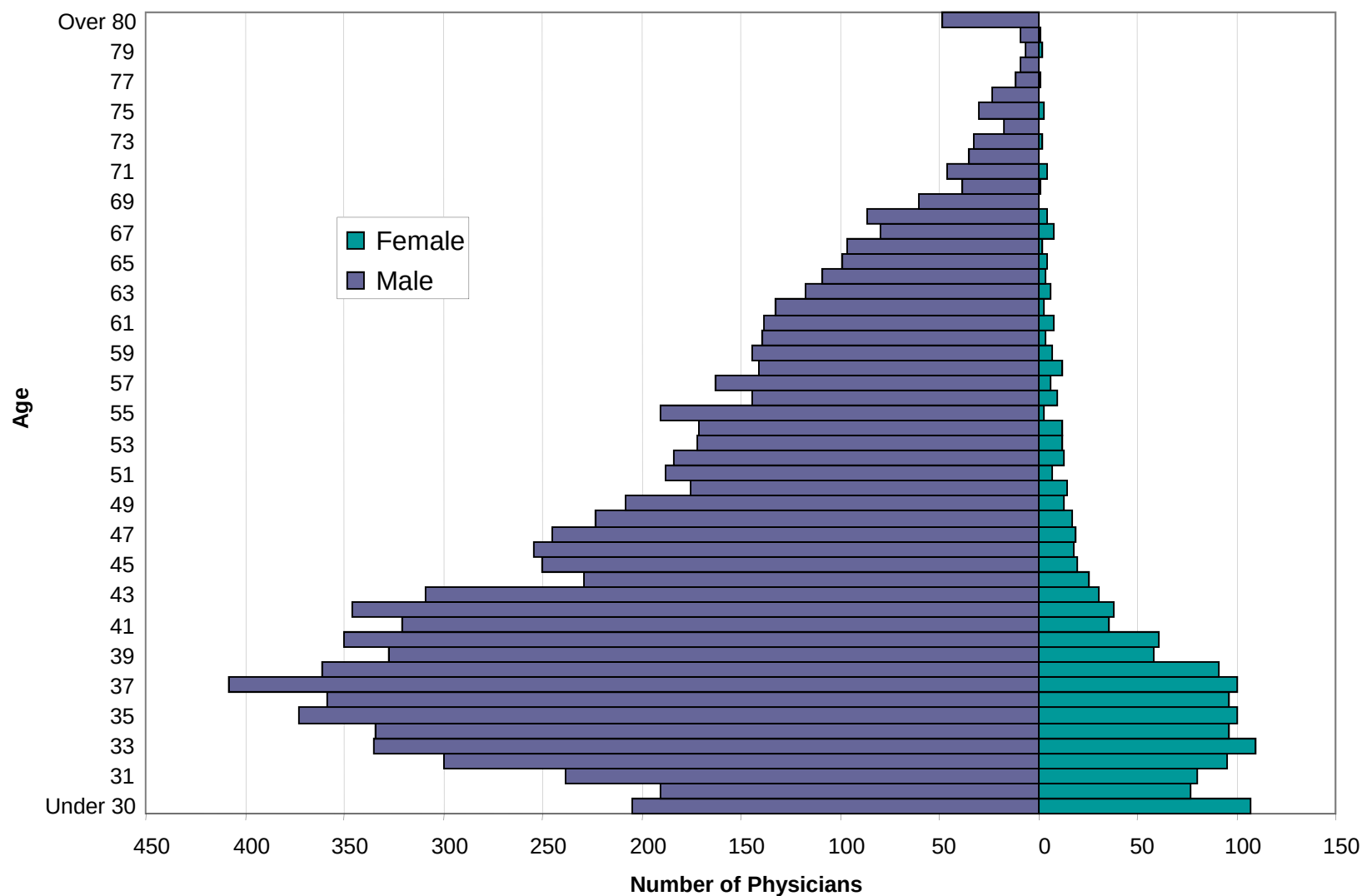
Note: There were three physicians with missing age.

Figures include active, in-state, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 1980.
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, 1980.



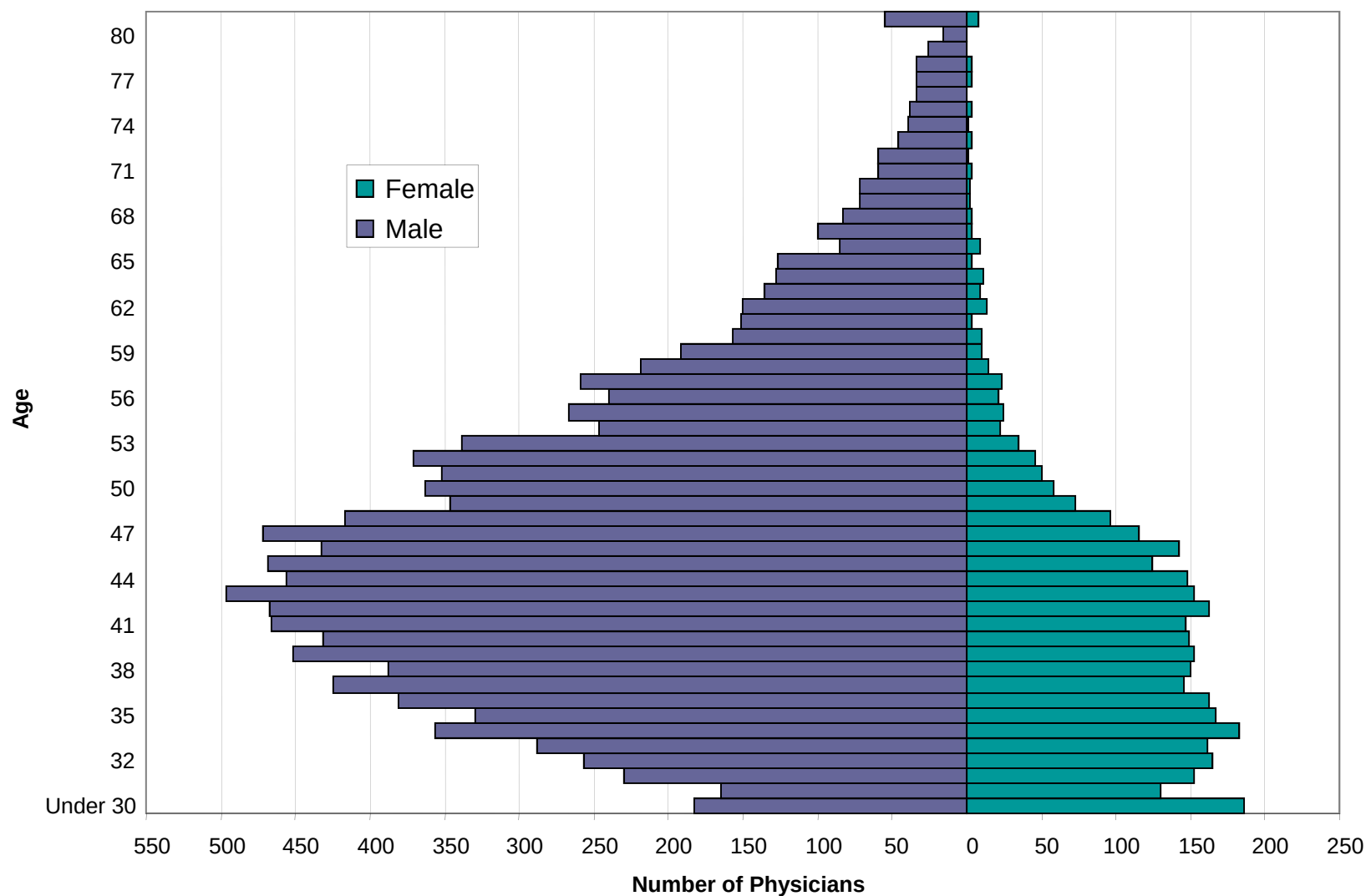
UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Age-Gender Pyramid, Physicians North Carolina, 1990



Figures include active, in-state, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 1990.
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, 1990.

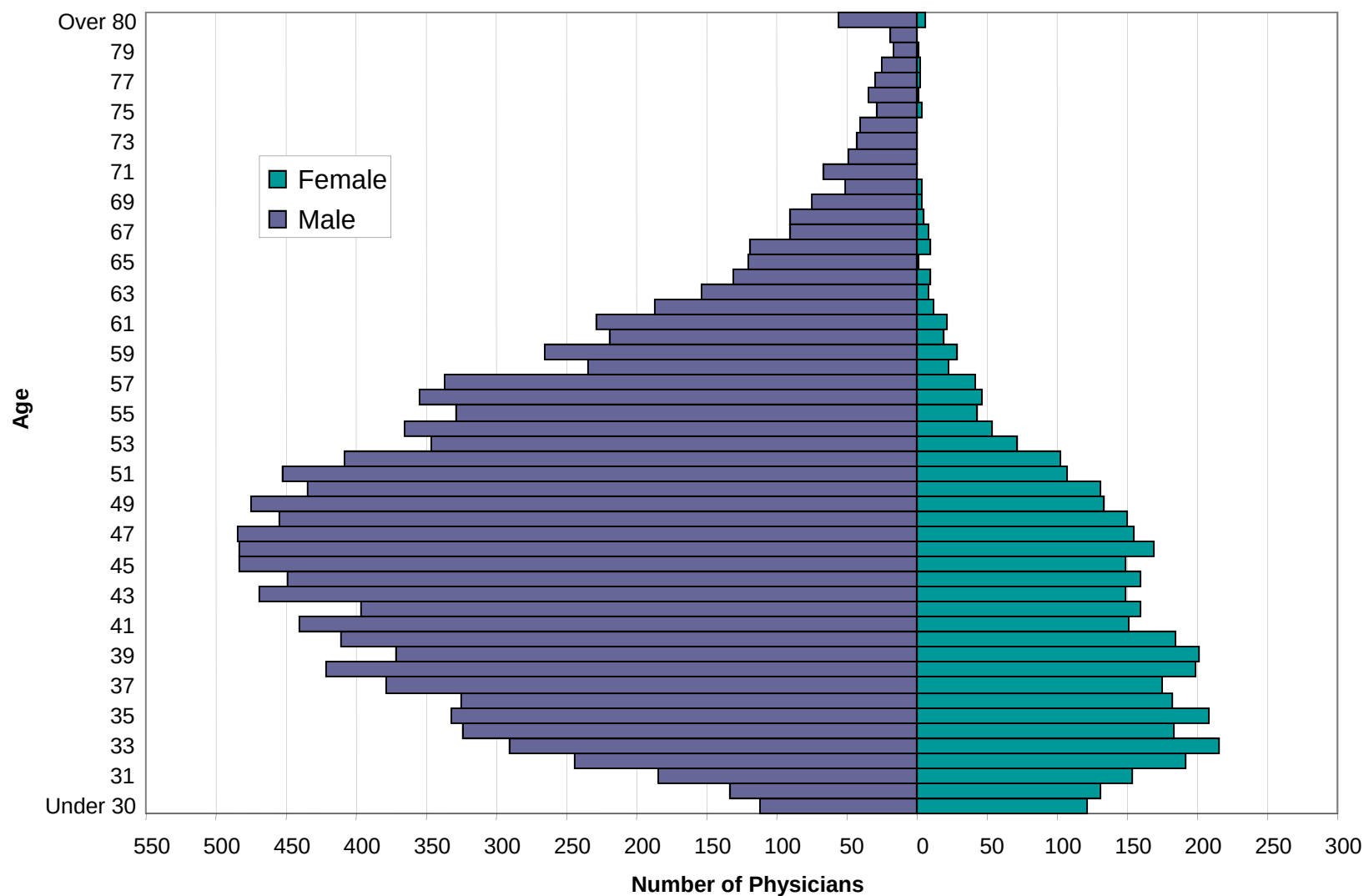
Age-Gender Pyramid, Physicians North Carolina, 2000



Note: There were three physicians with missing age.

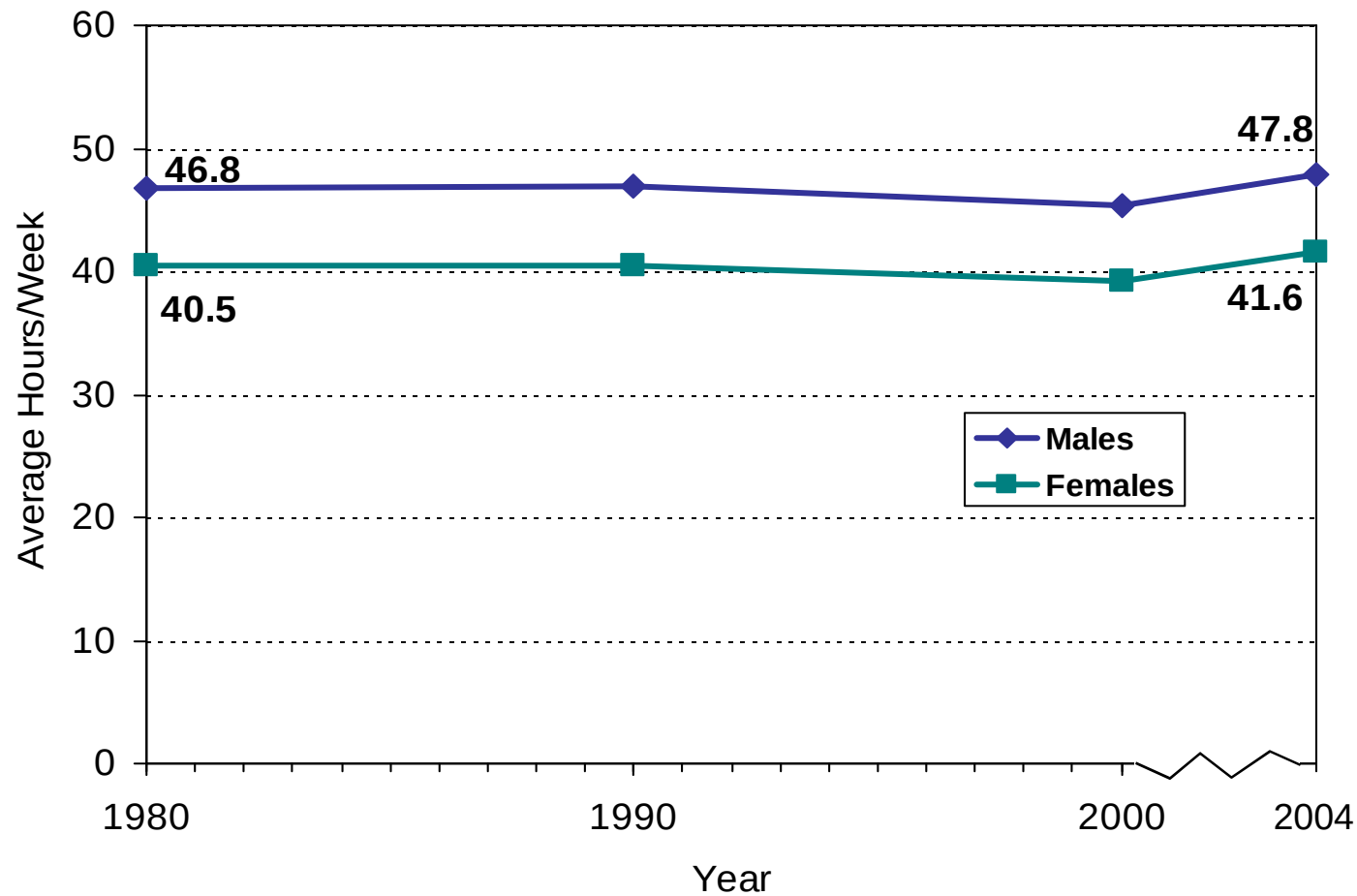
Figures include active, in-state, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 2000.
Source: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the North Carolina Medical Board, 2000.

Age-Gender Pyramid, Physicians North Carolina, 2004



Figures include active, in-state, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 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.

Average Patient Care Hours/Week Worked by NC Physicians, by gender 1980-2004

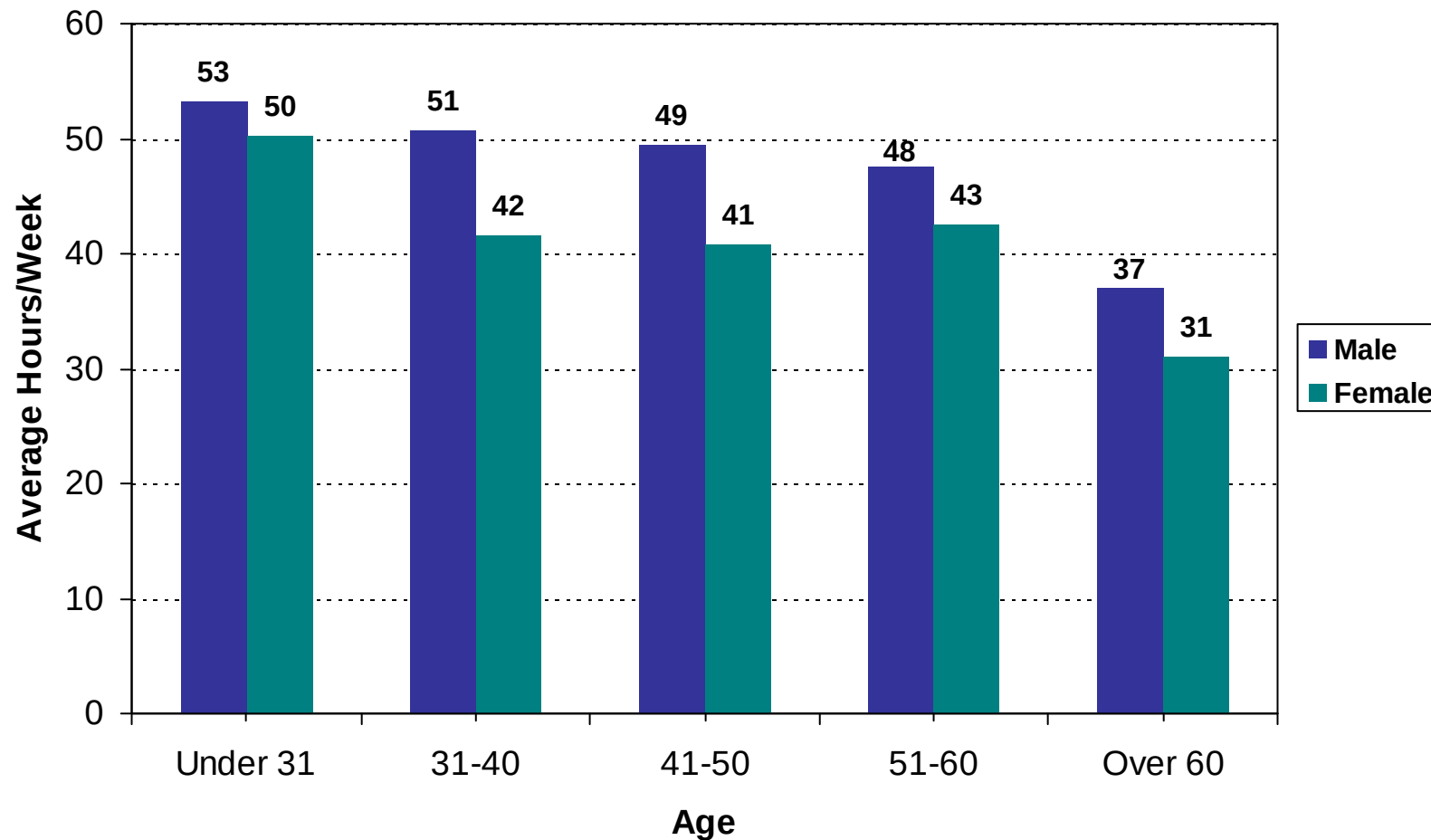


Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board, 1980-2004.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Average Patient Care Hours/Week Worked by NC Physicians, by Gender and Age 2004



Source: North Carolina Health Professions Data System, with data derived from the NC Medical Board, 2004.

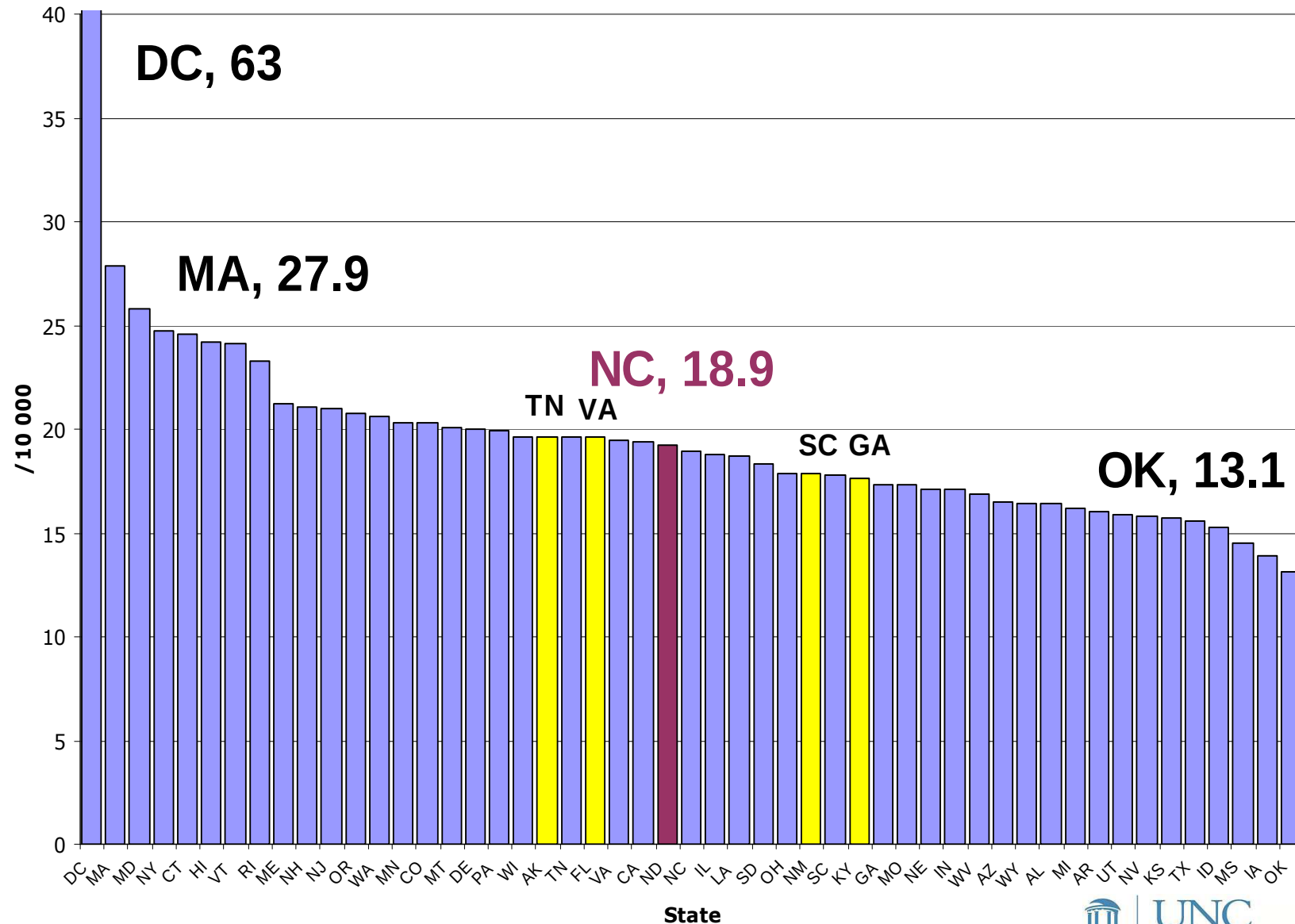
How Many Physicians Do We Need?

Alternative Ways to Measure Need

- Benchmark NC ratio per population to US and other states
- Benchmark NC ratio to ratios that adjust for population's age, sex and utilization rates and physician specialty and productivity (Solucient)
- Benchmark NC ratio to an ideal physician to population ratio to determine underserved areas (HPSAs).

NC has “average” physician supply

MDs/10 000, 2005

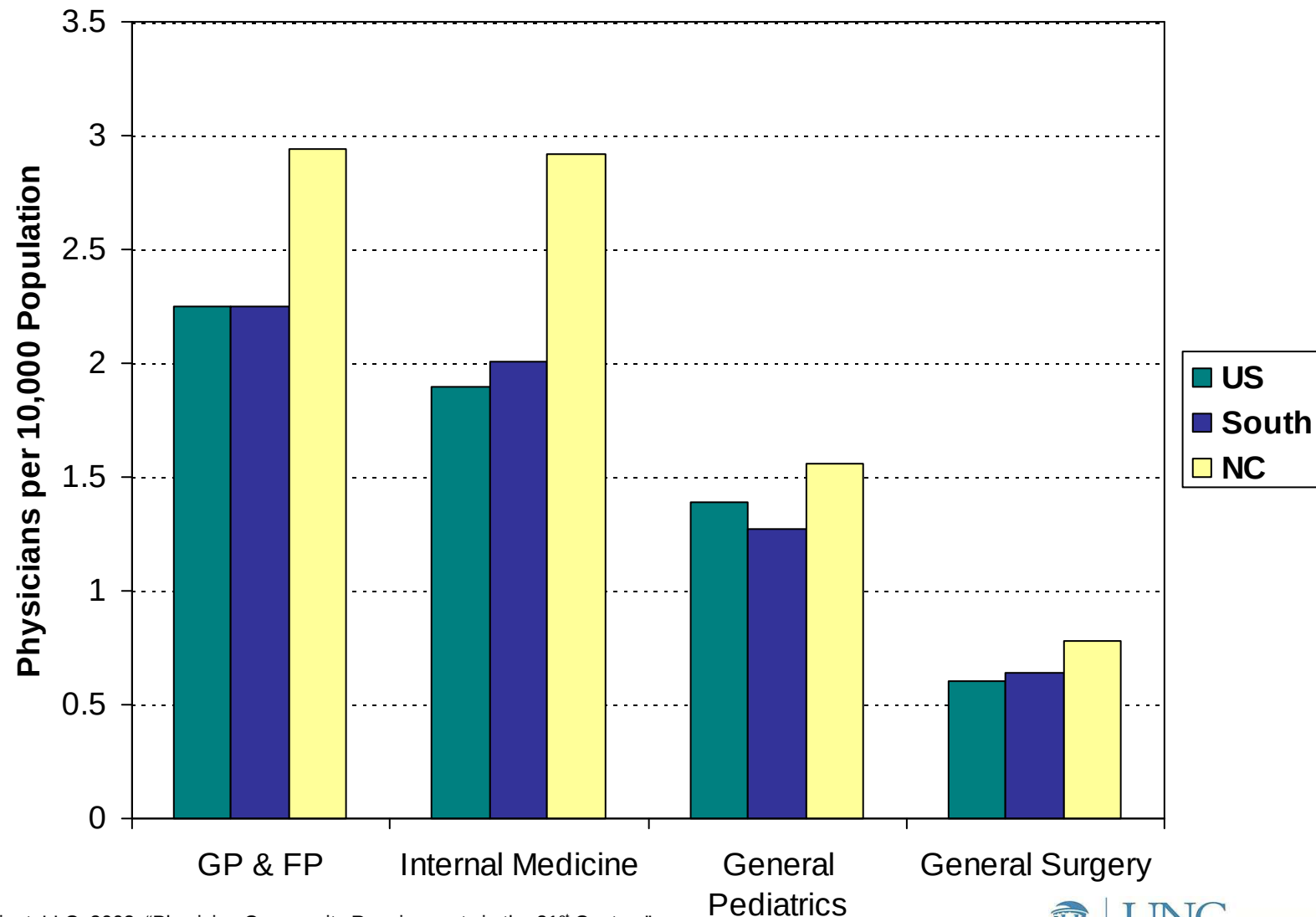


Source: AMA Masterfile, 2005



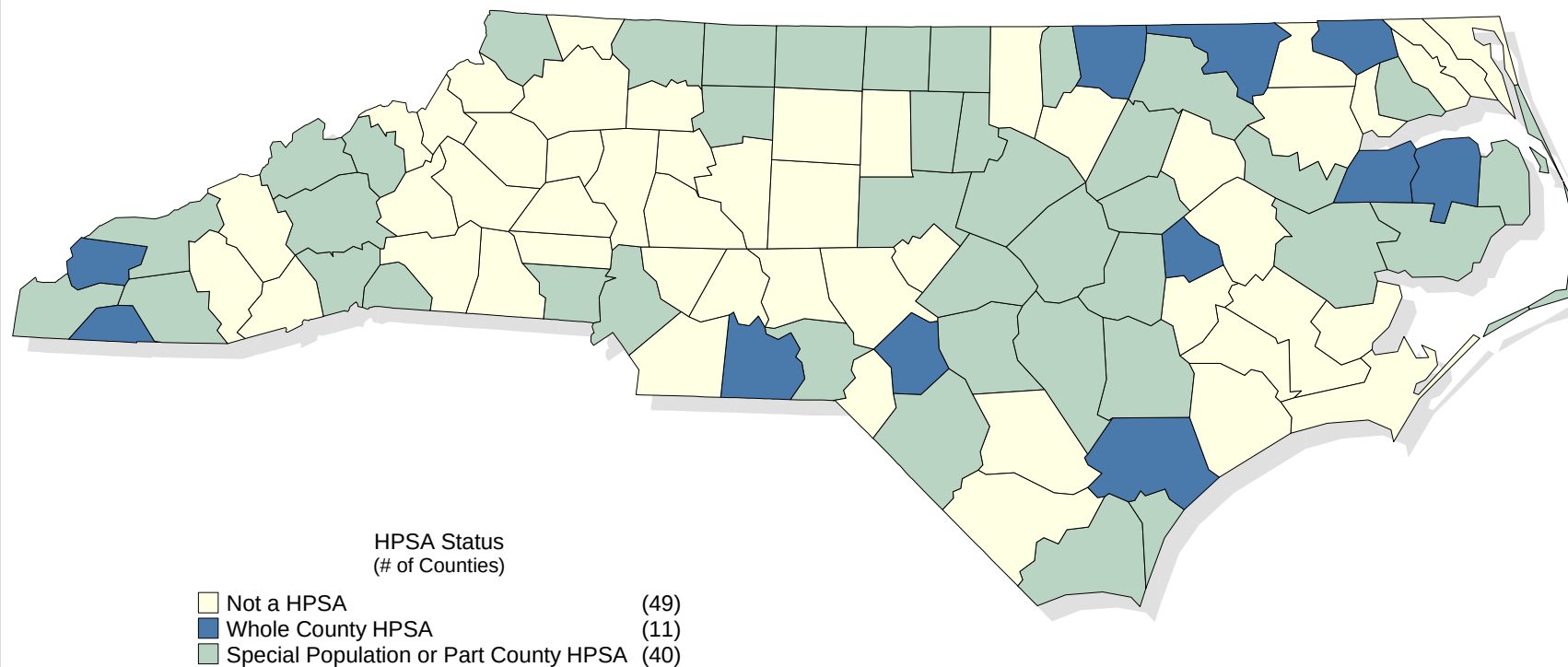
UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

NC Supply Compared to U.S. and Regional Benchmarks, 2003



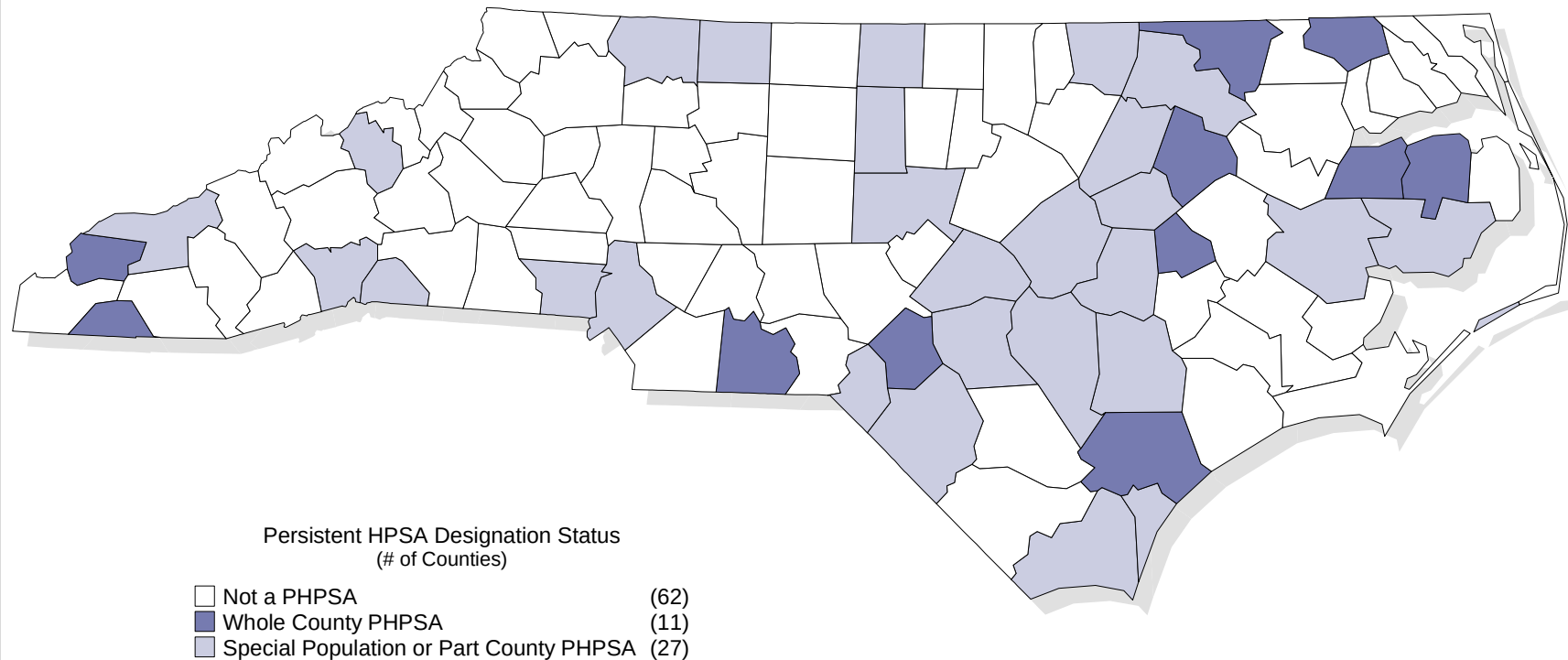
Source: Solucient, LLC. 2003. "Physician Community Requirements in the 21st Century"; NC Health Professions Data System.

Health Professional Shortage Areas (HPSAs) North Carolina, 2005



Produced by: North Carolina Health Professions Data System, Cecil G. Sheps
Center for Health Services Research, University of North Carolina at Chapel Hill.
Source: Source: Bureau of Health Professions, Shortage Designation Branch, 2005.

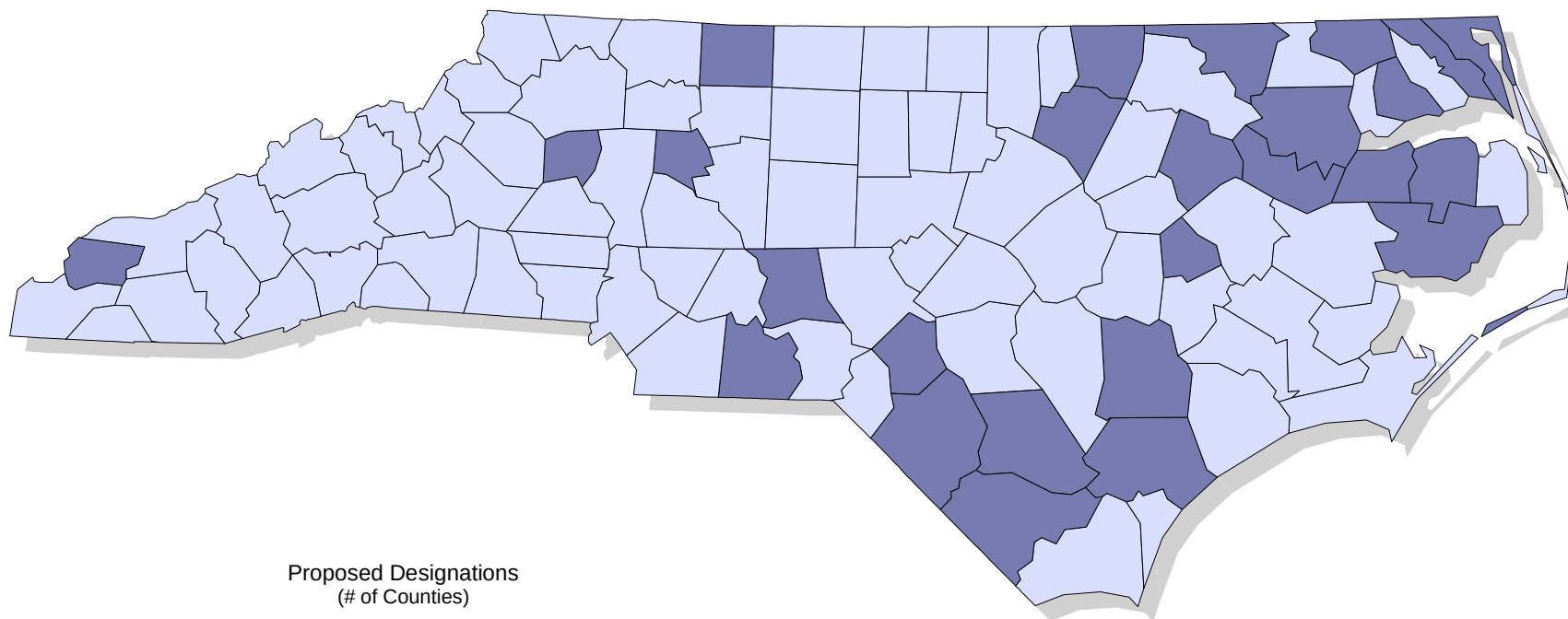
Persistent Health Professional Shortage Areas* (PHPSAs) North Carolina, 2005



Source: Source: Area Resource File, HRSA, DHHS, 2005;
Bureau of Health Professions, Shortage Designation Branch, 2005.
Produced by: North Carolina Health Professions Data System, Cecil G. Sheps
Center for Health Services Research, University of North Carolina at Chapel Hill.

*Persistent HPSAs are those designated as HPSA by the Health Resources and Services Administration (HRSA) from 1999 to 2005, or in 6 of the last 7 releases of HPSA definition.

Shortage Designations based on Proposed HPSA Methodology North Carolina, 2004



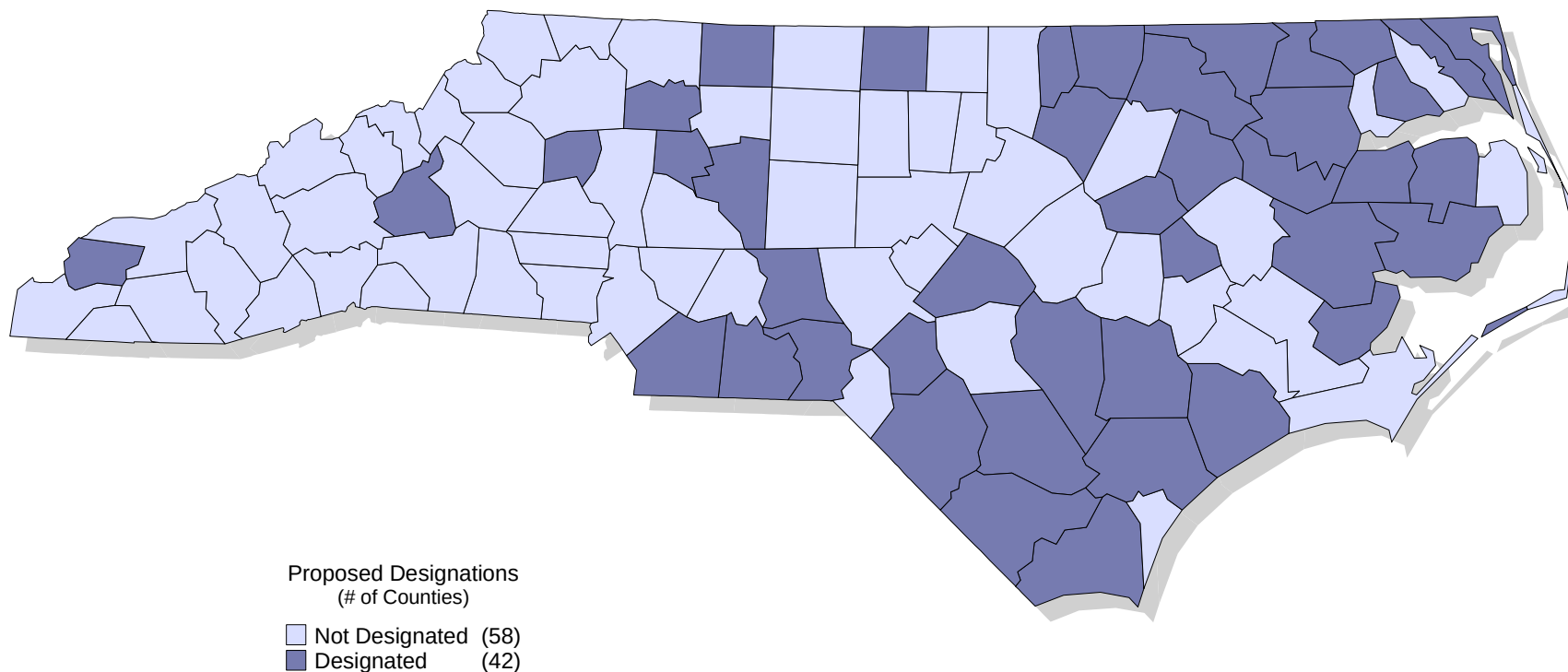
Proposed Designations
(# of Counties)

Not Designated (74)
Designated (26)

Sources: NCHPDS, Claritas, U.S. Census Bureau, NCHS.
Produced By: North Carolina Health Professions Data System, Cecil G. Sheps
Center for Health Services Research, University of North Carolina at Chapel Hill.

Designations based on proposed revisions to HPSA designation formula. Designation based on values of the following variables: percent elderly, percent nonwhite non Hispanic, percent Hispanic, population density, percent of population below 200% poverty, rates of infant mortality and low birth weight, unemployment, and mortality.

Shortage Designations based on Proposed HPSA Methodology, Excluding PAs, NPs and CNMs North Carolina, 2004



Sources: NCHPDS, Claritas, U.S. Census Bureau, NCHS.
Produced By: North Carolina Health Professions Data System, Cecil G. Sheps
Center for Health Services Research, University of North Carolina at Chapel Hill.

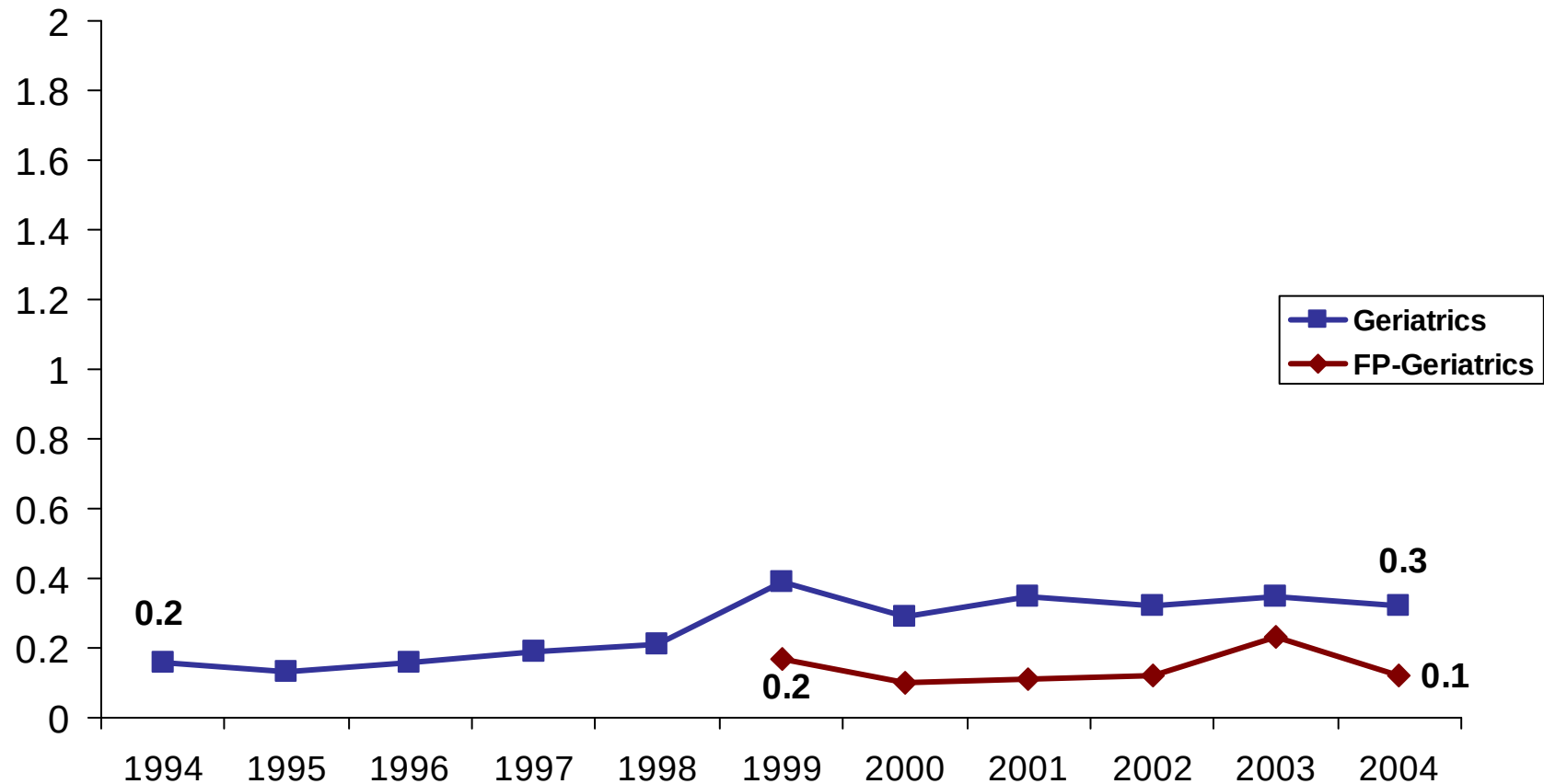
Designations based on proposed revisions to HPSA designation formula. Designation based on values of the following variables: percent elderly, percent nonwhite non Hispanic, percent Hispanic, population density, percent of population below 200% poverty, rates of infant mortality and low birth weight, unemployment, and mortality.

Next Steps in Measuring Need

- Develop more refined measures of need that are based on service areas instead of county-level data.

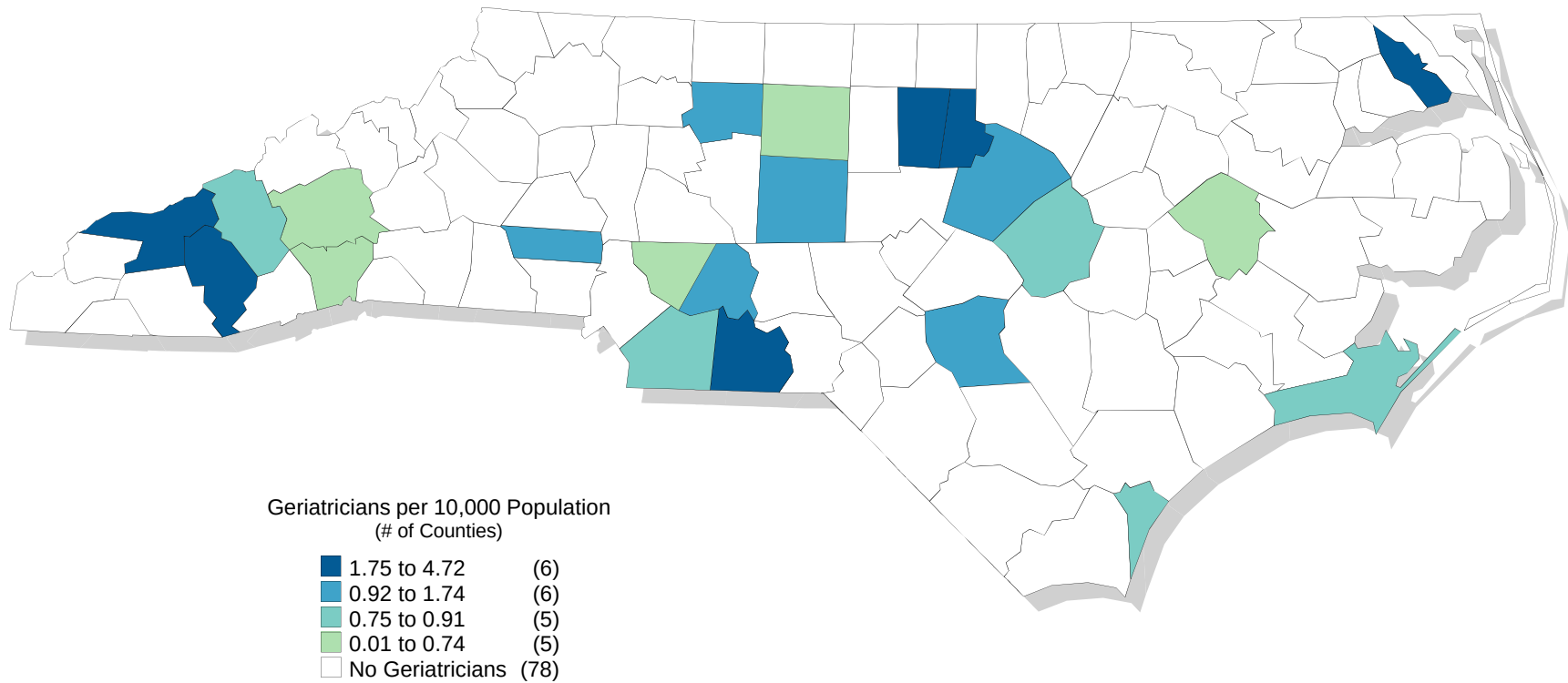
Extra Slides

Geriatricians per 10,000 Elderly Population, North Carolina 1994-2004



Source: North Carolina Health Professions Data System. Note: In 1999 the specialty "Family Practice-Geriatrics" was added to the database. These values are shown separately. Elderly population is adults ages 65 and over.

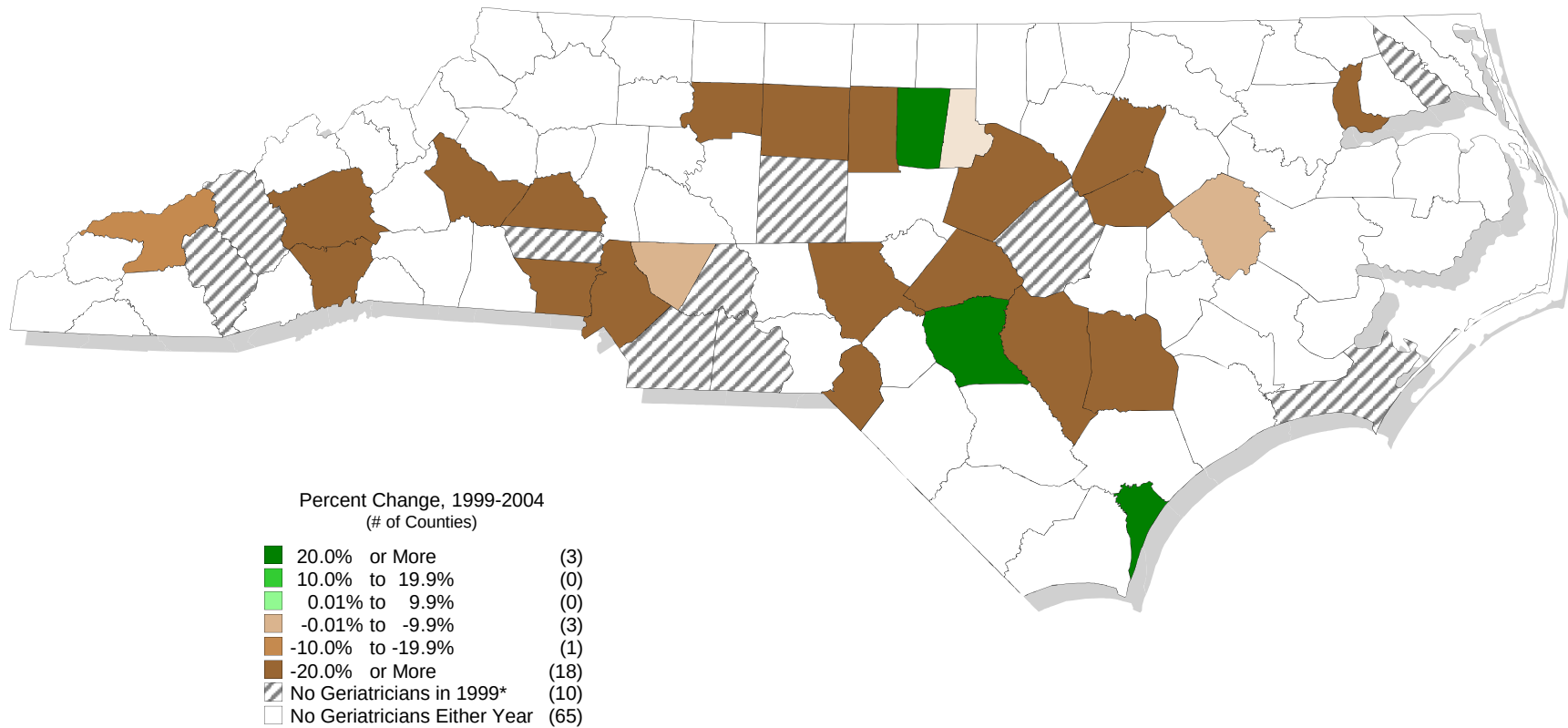
Geriatricians per 10,000 Population North Carolina, 1999-2004



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.

Counts include active, instate, nonfederal, non-resident-in-training physicians
indicating a primary specialty in Geriatrics or Family Practice - Geriatrics.

Percent Change in Geriatricians per 10,000 Population North Carolina, 1999-2004

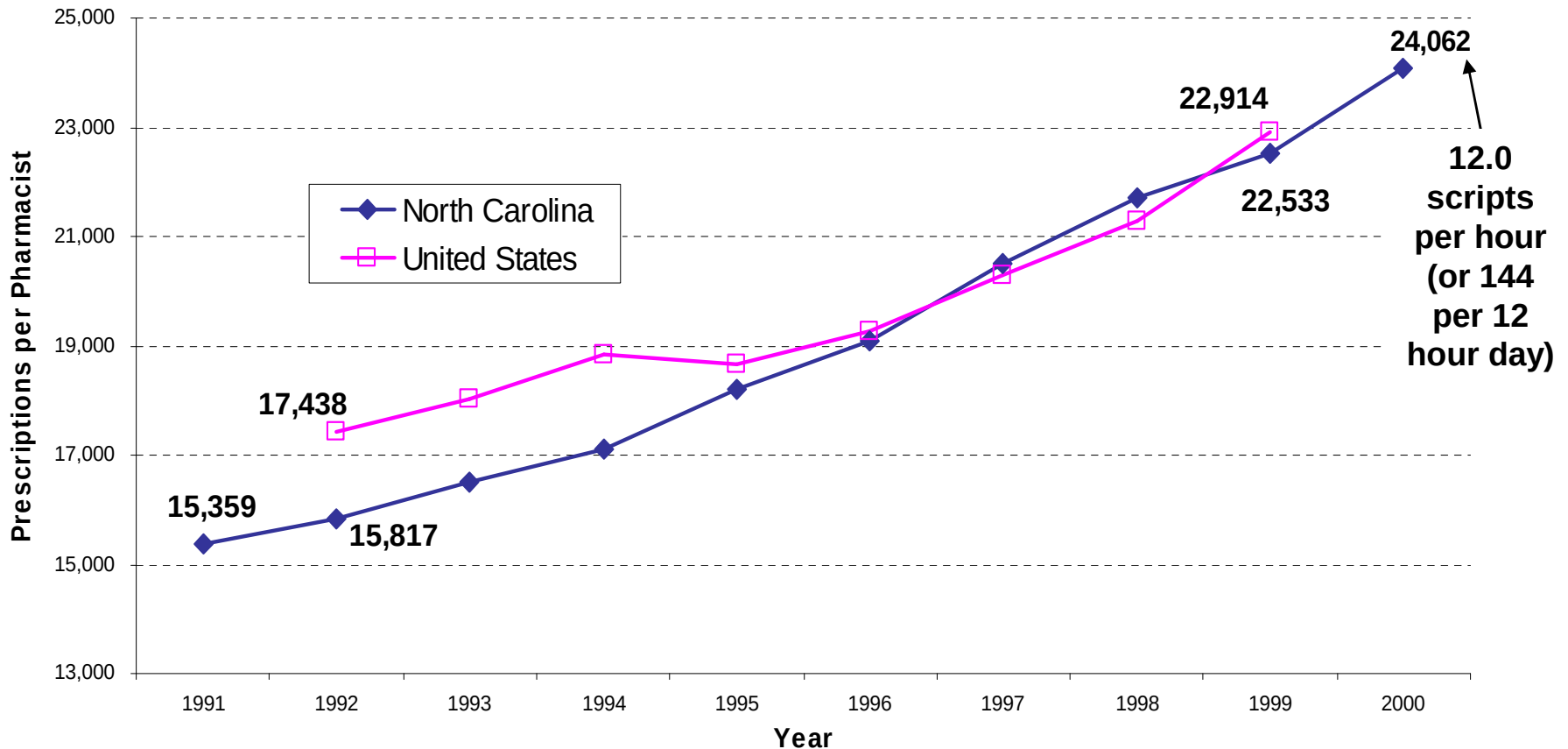


Source: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the North Carolina Medical Board, 1995-2004.

Counts include active, instate, nonfederal, non-resident-in-training physicians indicating a primary specialty in Geriatrics or Family Practice - Geriatrics.

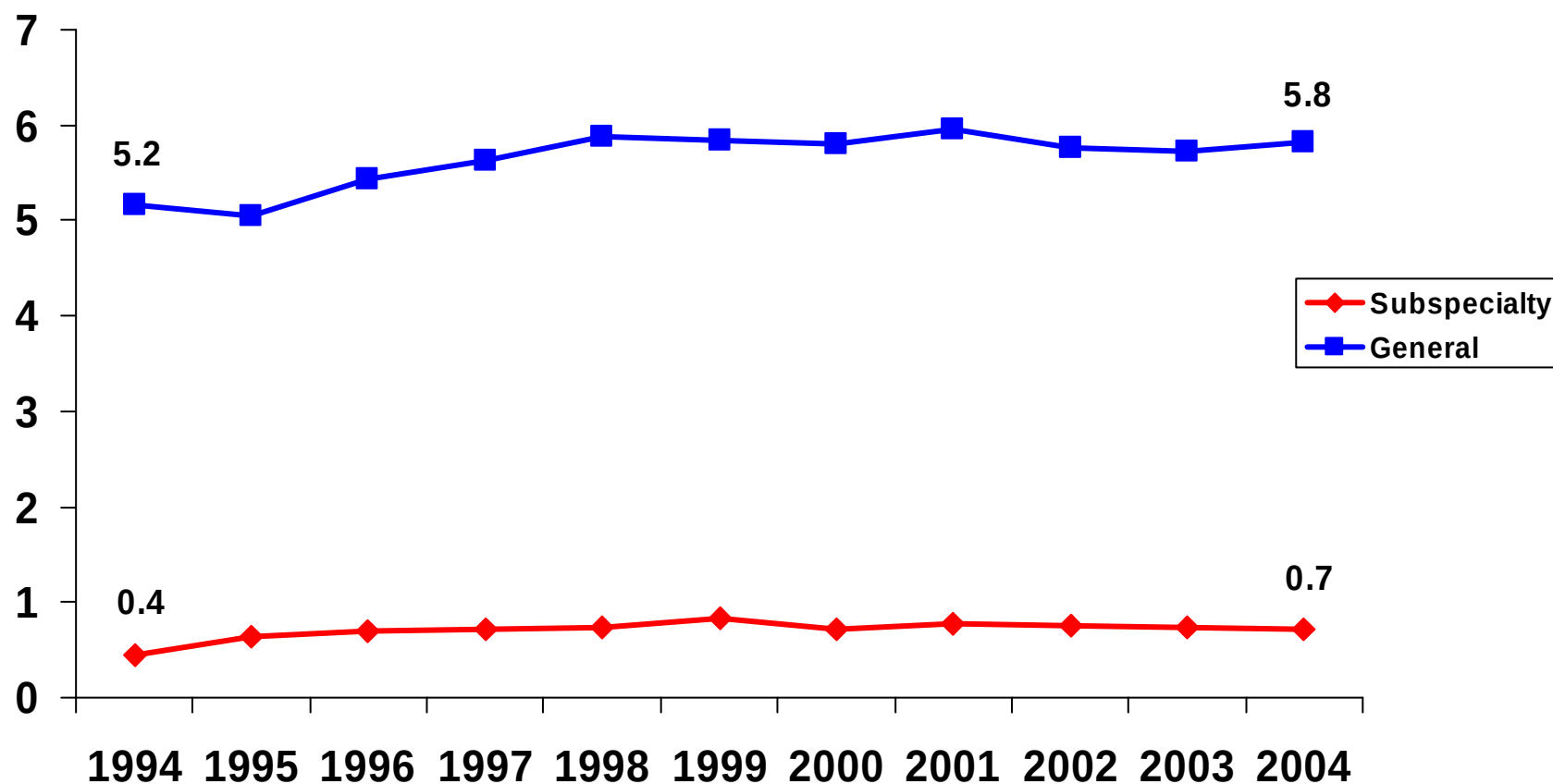
*There were no active Geriatricians in 1995; there were 11 active Geriatricians in 2004.

Pharmacist Workload: Annual Retail Prescriptions Dispensed Per Retail Pharmacist, US and NC, 1991-2000



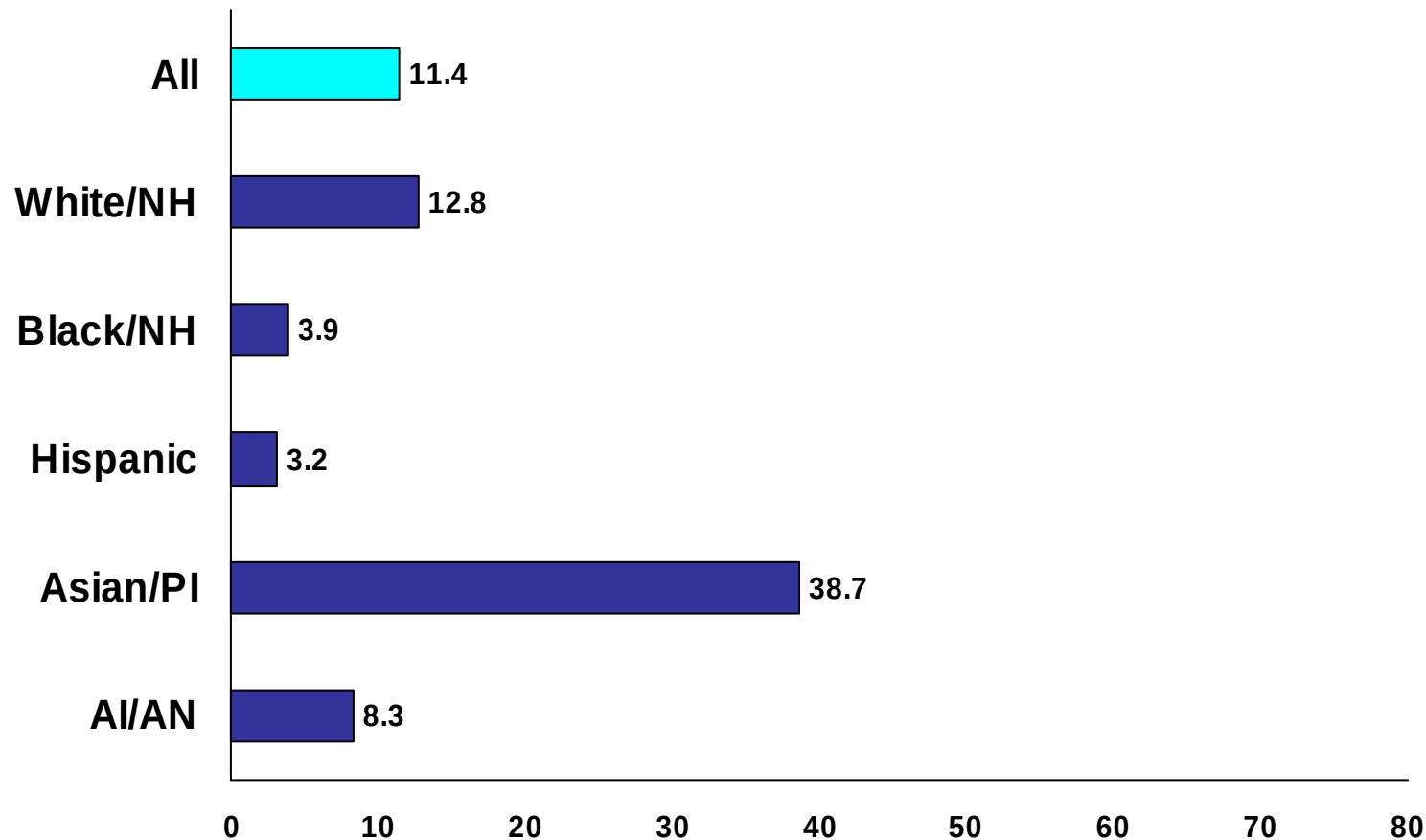
Source: Prescription Data are from IMS Health and include retail dispensed prescriptions only. Data include new prescriptions and refills dispensed. Data does not include prescriptions dispensed at hospitals, clinics, long term care facilities or mail order operations. Pharmacist data are from the North Carolina Health Professions Data and Analysis System and the North Carolina Board of Pharmacy. National data from DHHS Health Resources and Services Administration's The Pharmacist Workforce, December 2000.

Pediatricians per 10,000 Child Population, North Carolina 1994-2004



Source: North Carolina Health Professions Data System

Total Primary Care Workers (Physicians, NPs, PAs) per 10,000 “Same Race” Population, North Carolina 2004



Source: North Carolina Health Professions Data System and US Census. Note: Race data was missing for 338 providers; ratios by race are based on the 9,383 providers for whom race information was available. AI/AN is American Indian/Alaskan Native; PI is Pacific Islander.