

North Carolina Dental Workforce Trends

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North Carolina Committee for Dental Health

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UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Who we are and what we do



North Carolina Health Professions Data System (HPDS)

Mission: to provide timely, objective data and analysis to inform health workforce policy in North Carolina and the United States

- Based at Cecil G. Sheps Center for Health Services Research at UNC-CH, but mission is statewide
- A collaboration between the Sheps Center, NC AHEC and the health professions licensing boards
- System is independent of government and health care professionals

North Carolina's health workforce data are the envy of other states

- 36 years of continuous, complete licensure (*not survey*) data on 19 health professions from 12 boards
- Data are provided *voluntarily* by the boards—there is no legislation that requires this, there is no appropriation
- Data housed at Sheps but remain property of licensing board, permission sought for each “new” use

System would not exist without data and support of licensure boards

The Dental Workforce in NC

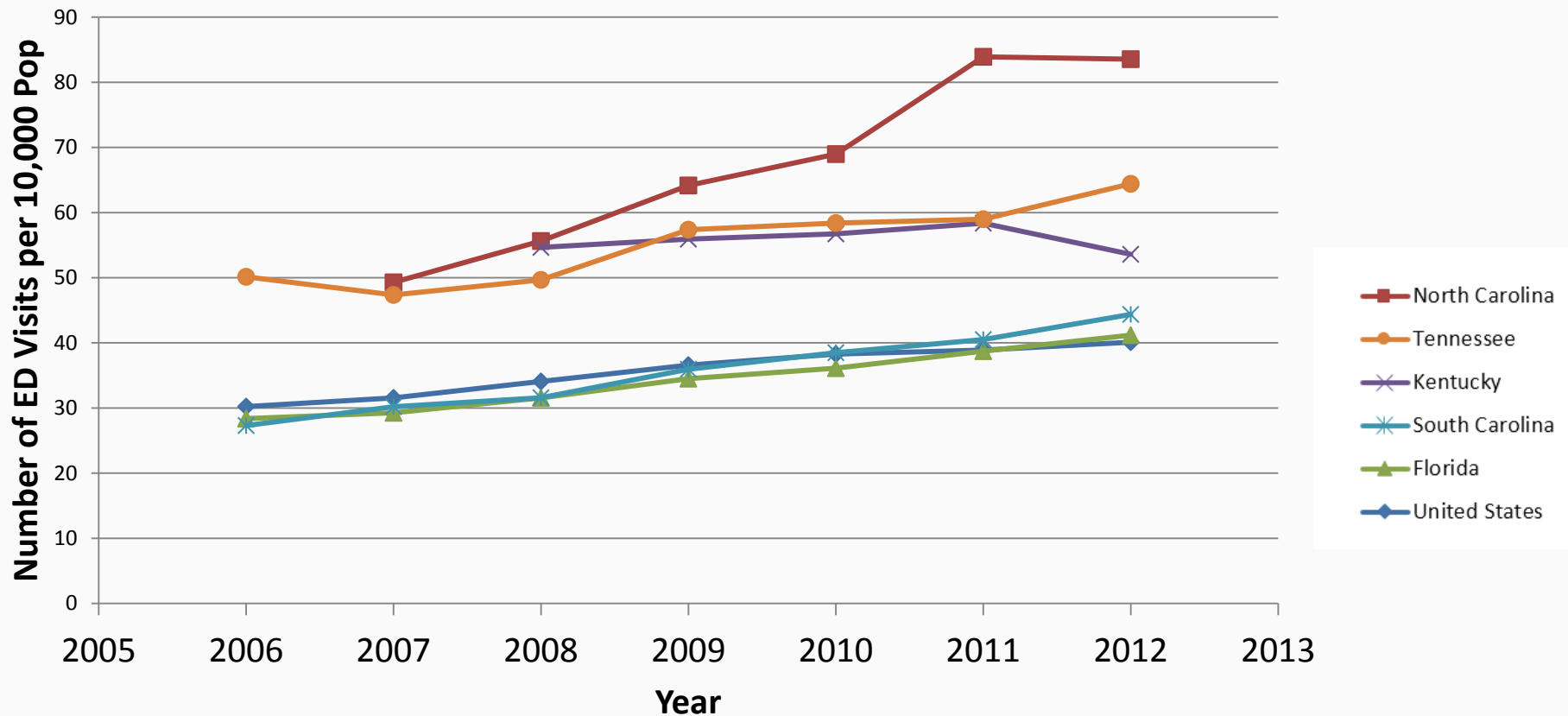


Overview of Presentation

- Basic data on workforce supply, distribution, demographic and practice characteristics can provide evidence to inform policy
- State budget constraints – what is the return on public investments in education?
- HRSA workforce projections
 - Dentist shortage will increase from 270 (2012) to 459 (2025)
 - Dental hygienist surplus will increase to 858 (2025)

NC has high per capita rate and most rapid increase in ED visits for dental disorders

Emergency Department Visits for ICD-9-CM All-Listed Diagnosis Code 525.9, Dental Disorder Not Otherwise Specified, per 10,000 population

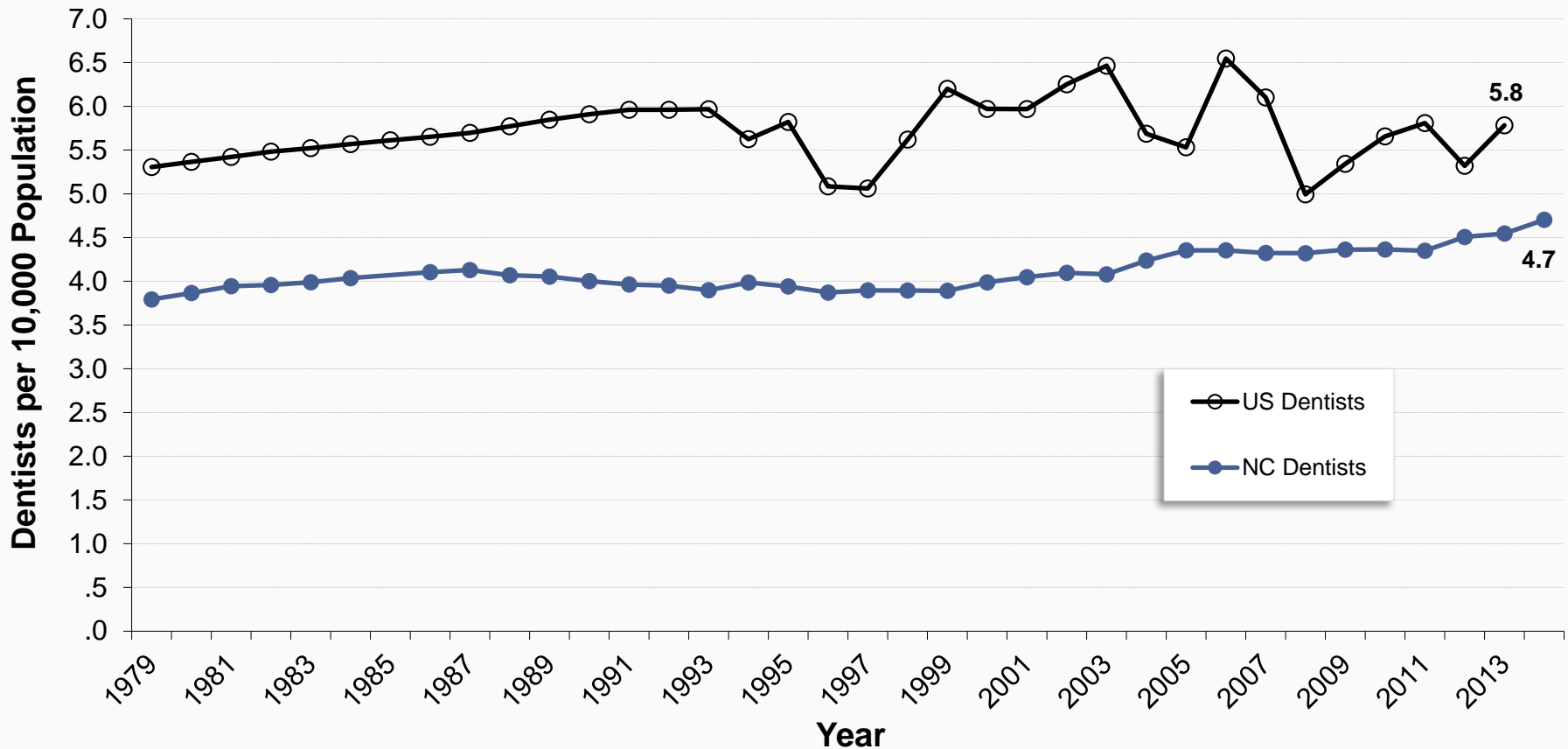


North Carolina versus the United States: Supply and Distribution



NC has consistently lagged behind US in dentists per capita

Dentists per 10,000 Population,
US and NC, 1979 to 2014



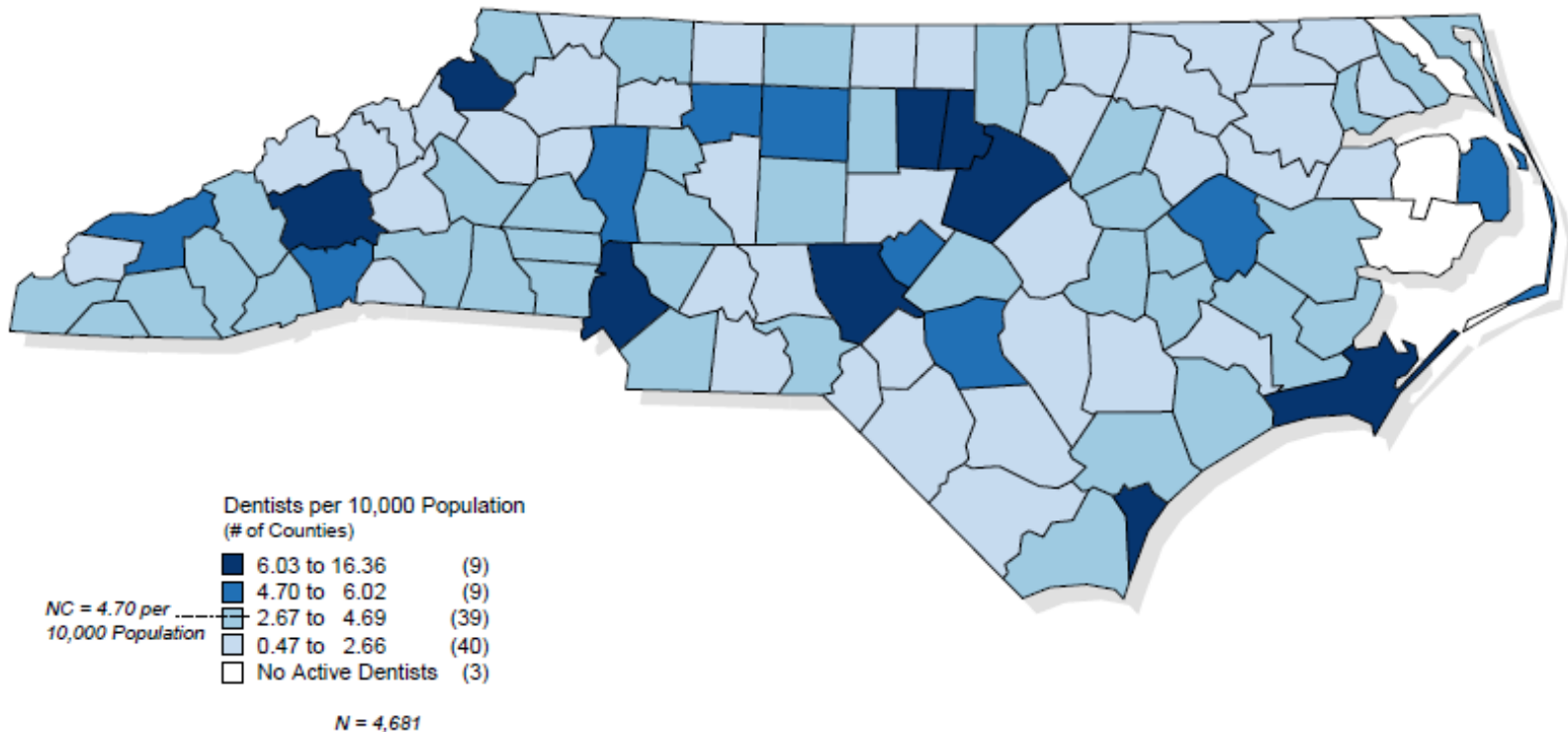
And has lagged behind most states as well...

Active Dentists per 10,000 Civilian Population

	1996		2000		2003		2007		2009		2011	
	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio
United States		6.1		6.1		6.0		6.0		6.1		6.2
Top Ranked												
Massachusetts	4	8.1	2	8.1	2	8.2	1	8.2	1	8.4	1	8.6
Hawaii	1	8.9	1	8.2	1	8.2	2	8.1	5	7.7	5	7.9
New Jersey	5	8.1	4	7.9	3	7.9	3	8.1	2	8.1	2	8.3
New York	2	8.2	3	8.0	4	7.9	4	7.9	3	7.8	4	8.0
Bottom Ranked												
North Carolina	47	4.4	47	4.2	47	4.4	47	4.5	47	4.6	47	4.7
Alabama	46	4.4	46	4.3	45	4.4	48	4.4	48	4.4	48	4.4
Arkansas	48	4.1	48	4.0	48	4.1	49	4.1	50	4.0	49	4.2
Mississippi	49	4.0	49	3.9	50	4.0	50	4.1	49	4.1	50	4.2

NC's dentists are concentrated in one fifth of the state's counties

Dentists per 10,000 Population
North Carolina, 2014



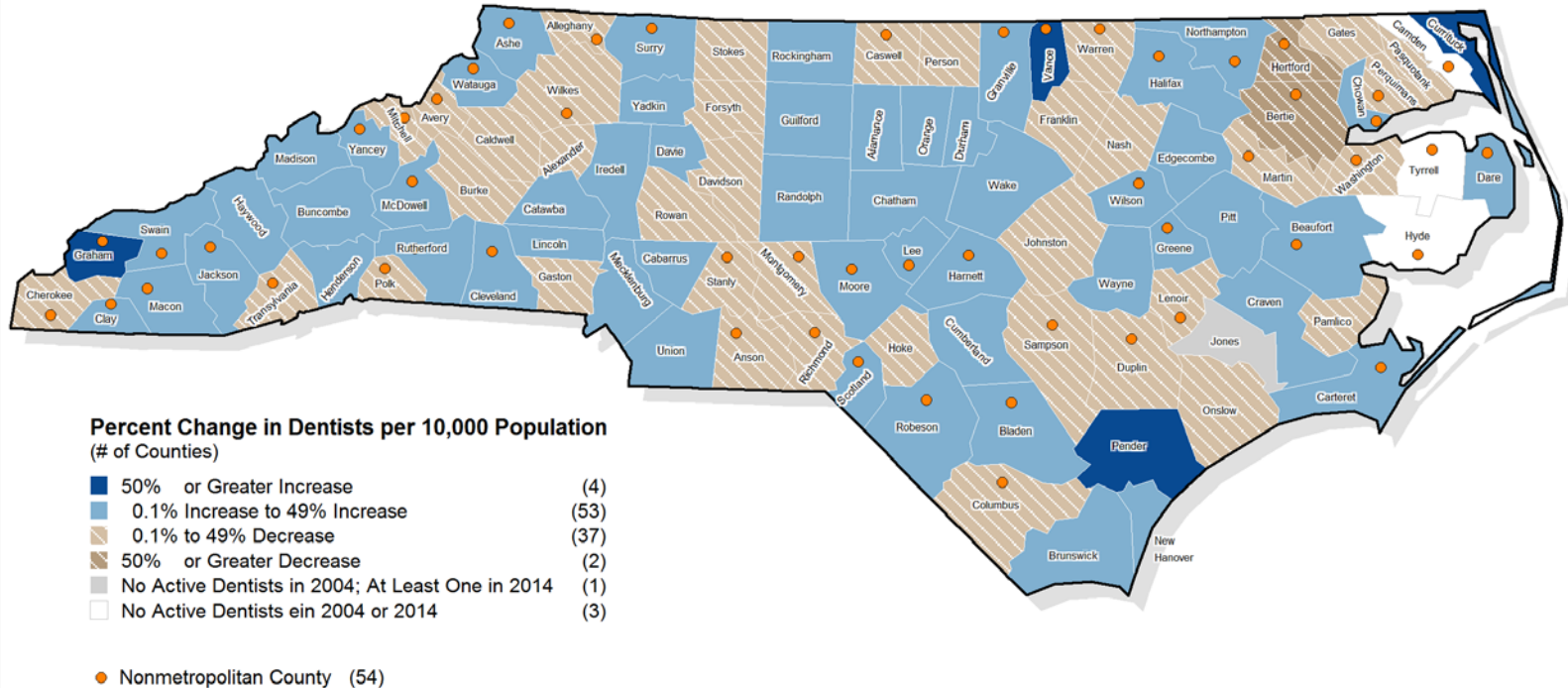
Note: Data include active, instate dentists licensed in North Carolina as of October 31, 2014.

Source: North Carolina Health Professions Data System, with data derived from the North Carolina State Board of Dental Examiners, 2014.

Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

Between 2004 and 2014, 42 of NC's counties saw a loss or no change in ratio of dentists per capita

Percent Change in Dentists per 10,000 Population North Carolina, 2004-2014



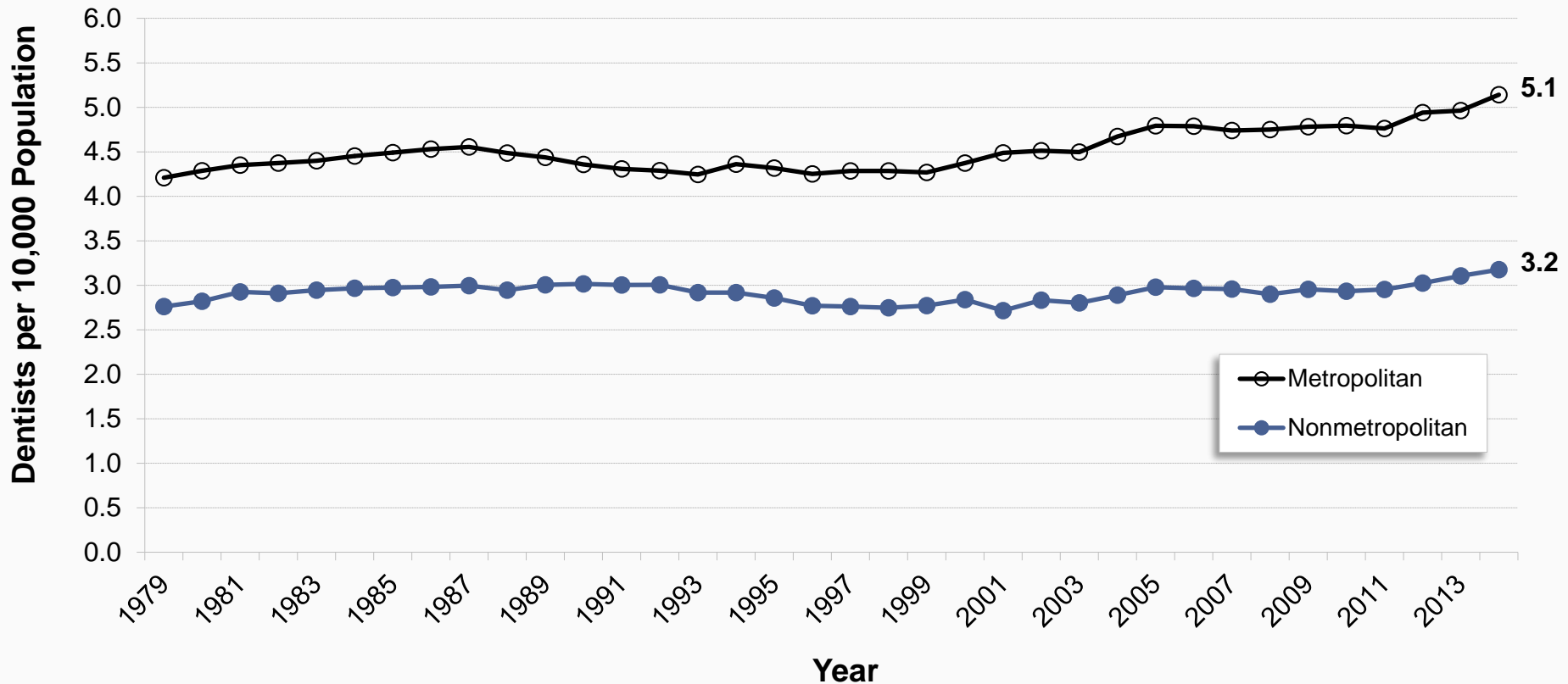
Source: North Carolina Health Professions Data System, with data derived from the North Carolina State Board of Dental Examiners, 2014.

Note: Data include dentists actively practicing in North Carolina as of October 31, 2014. "Core Based Statistical Area" (CBSA) is the US Census Bureau and Office of management and Budget collective term for Metropolitan and Micropolitan Statistical Areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs, effective March 2013.

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Per capita supply of dentists in nonmetropolitan counties is stagnant...

Dentists per 10,000 Population by Metropolitan and Nonmetropolitan Counties, North Carolina, 1979 to 2014



1985 data are averaged between 1984 and 1986 due to missing data.

North Carolina population data are smoothed figures based on 1980, 1990, 2000 and 2010 Censuses.

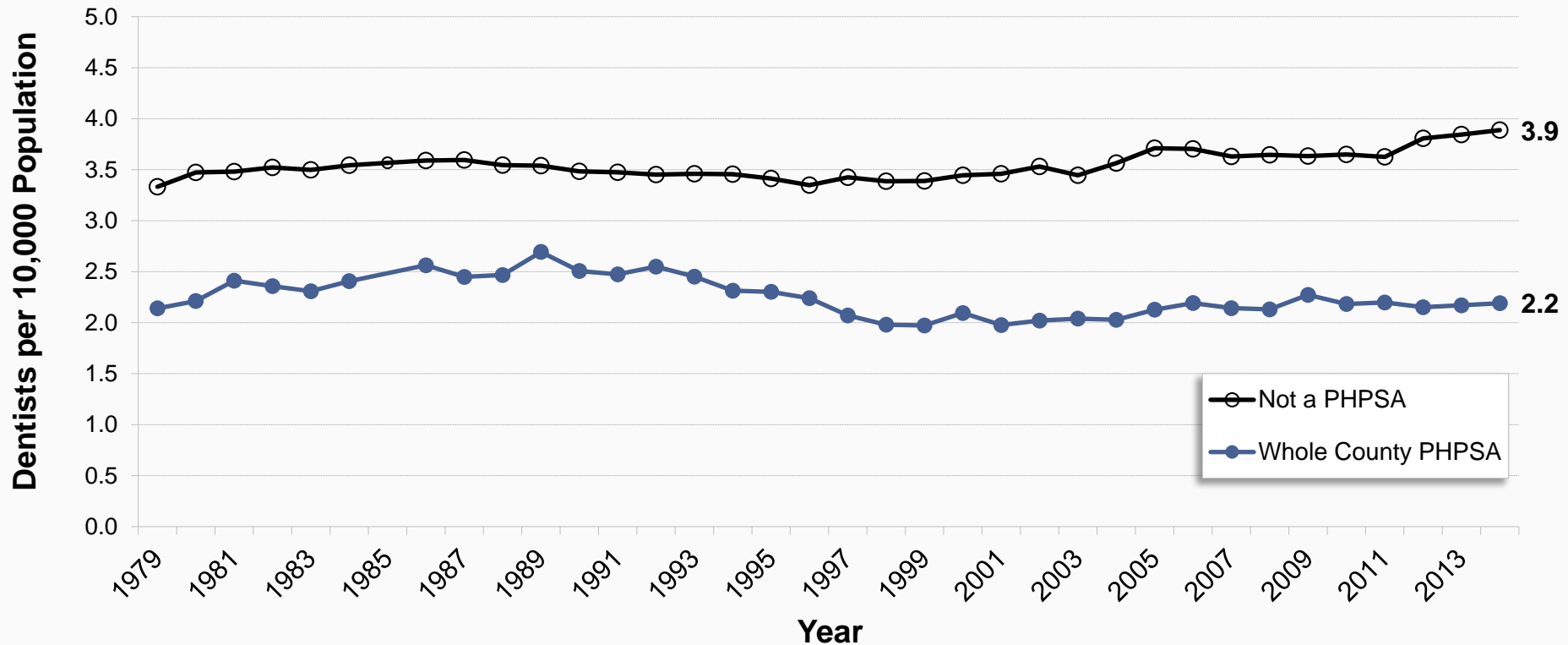
Source for Metropolitan-Nonmetropolitan definition: Office of Management and Budget, 2013.

Sources: NC Health Professions Data System, 1979 to 2014 with data derived from the North Carolina State Board of Dental Examiners; HRSA, Bureau of Health Professions; US Bureau of the Census; Center for Disease Control; North Carolina Office of State Planning. Figures include all licensed active dentists practicing in NC as of Oct. 31 of each year.



... And the gap between NC's most underserved and not underserved counties has been slowly widening

Dentists per 10,000 Population by Persistent Primary Care Health Professional Shortage Area (PHPSA) Status North Carolina, 1979 to 2014



1985 data are averaged between 1984 and 1986 due to missing data.

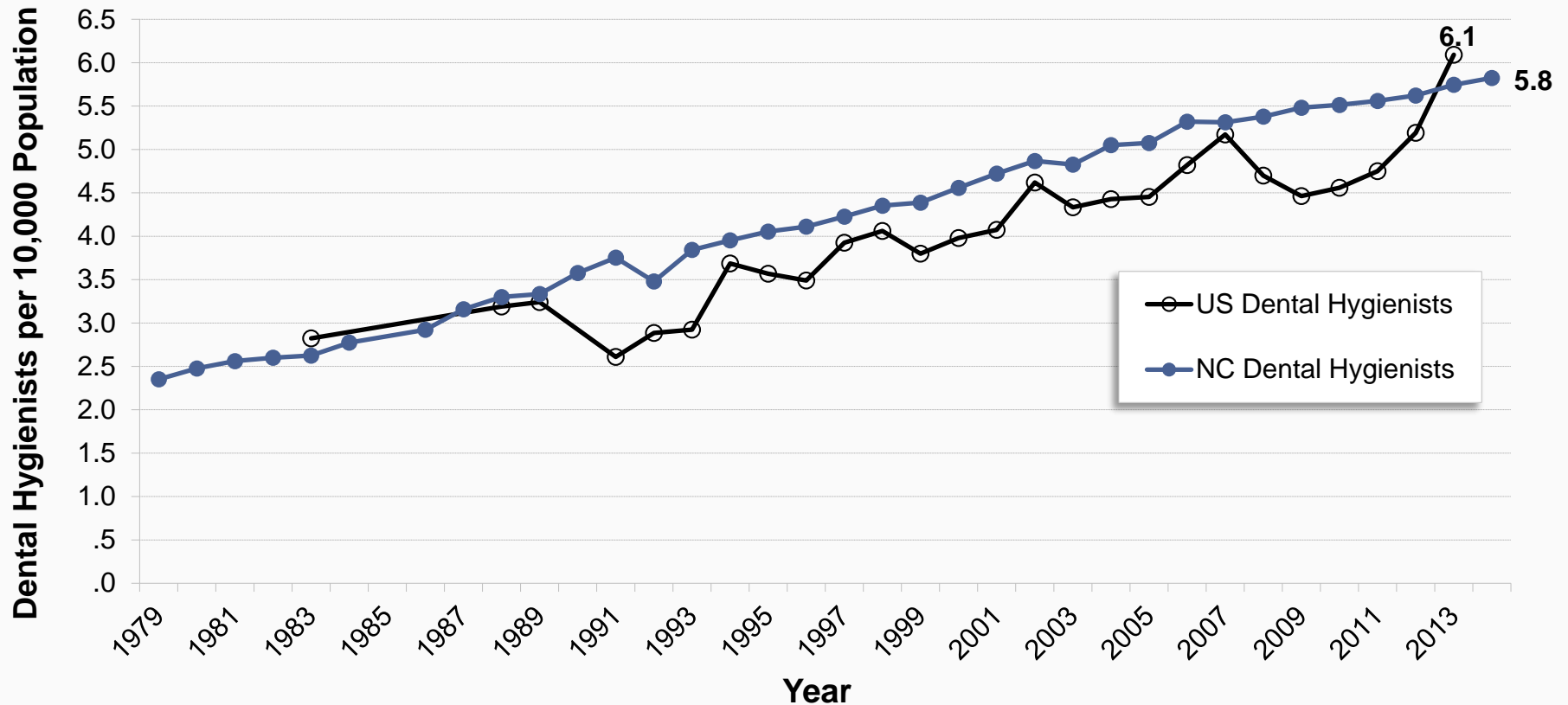
North Carolina population data are smoothed figures based on 1980, 1990, 2000 and 2010 Censuses. Source for Health Professional Shortage Areas: Area Health Resource File, HRSA, Department of Health and Human Services. 2015 Persistent HPSAs are those designated as HPSAs by HRSA in at least 6 of the 7 most recent HPSA designations (2008-2013, 2015).

Sources: NC Health Professions Data System, 1979 to 2014 with data derived from the North Carolina State Board of Dental Examiners; HRSA, Bureau of Health Professions; US Bureau of the Census; Center for Disease Control; North Carolina Office of State Planning. Figures include all licensed active dentists practicing in NC as of Oct. 31 of each year.



NC has seen consistent growth in dental hygienists

Dental Hygienists per 10,000 Population, US and NC, 1979 to 2014

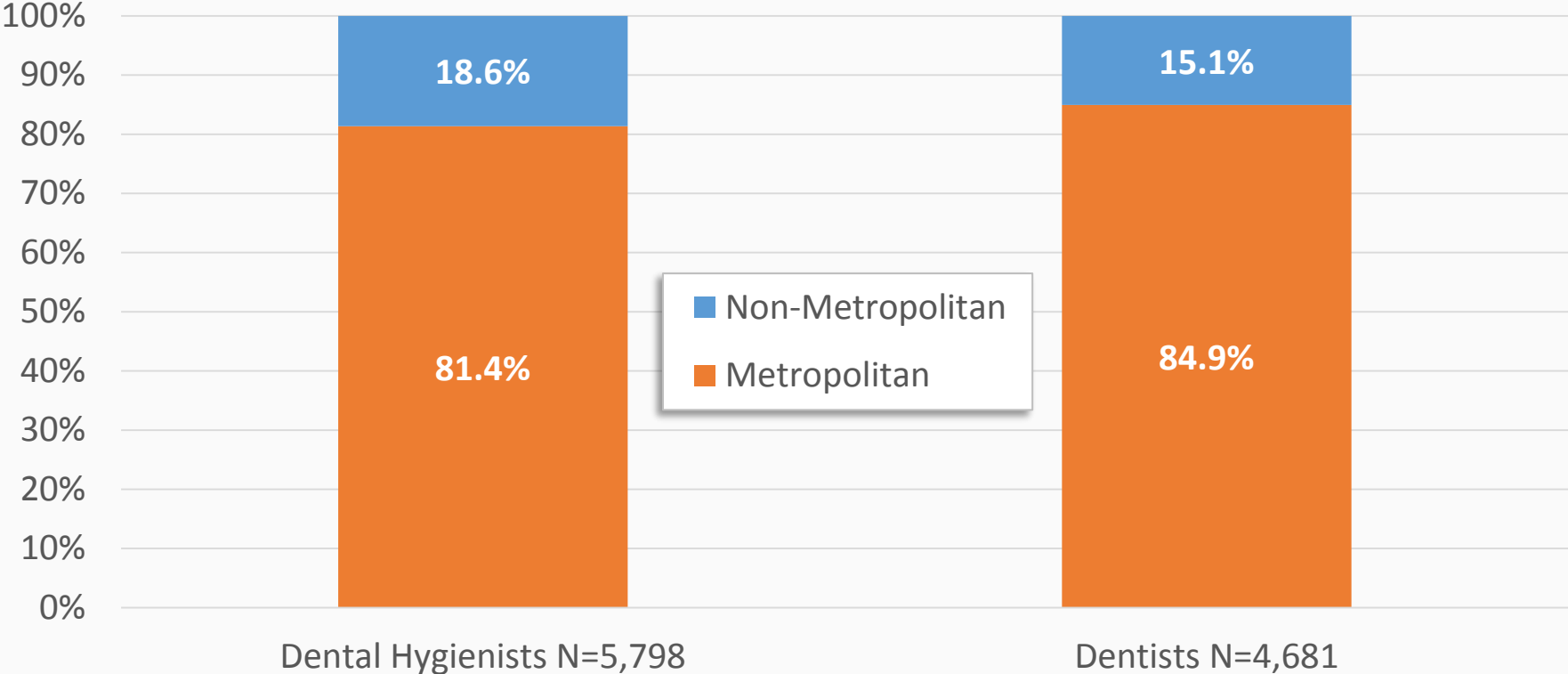


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Sources: NC Health Professions Data System, 1979 to 2014 with data derived from the North Carolina State Board of Dental Examiners; HRSA, Bureau of Health Professions; US Bureau of the Census; Center for Disease Control; NC Office of State Planning. Figures include all licensed active dental hygienists practicing in NC as of Oct. 31 of each year.

Slightly more dental hygienists than dentists practice in nonmetropolitan counties

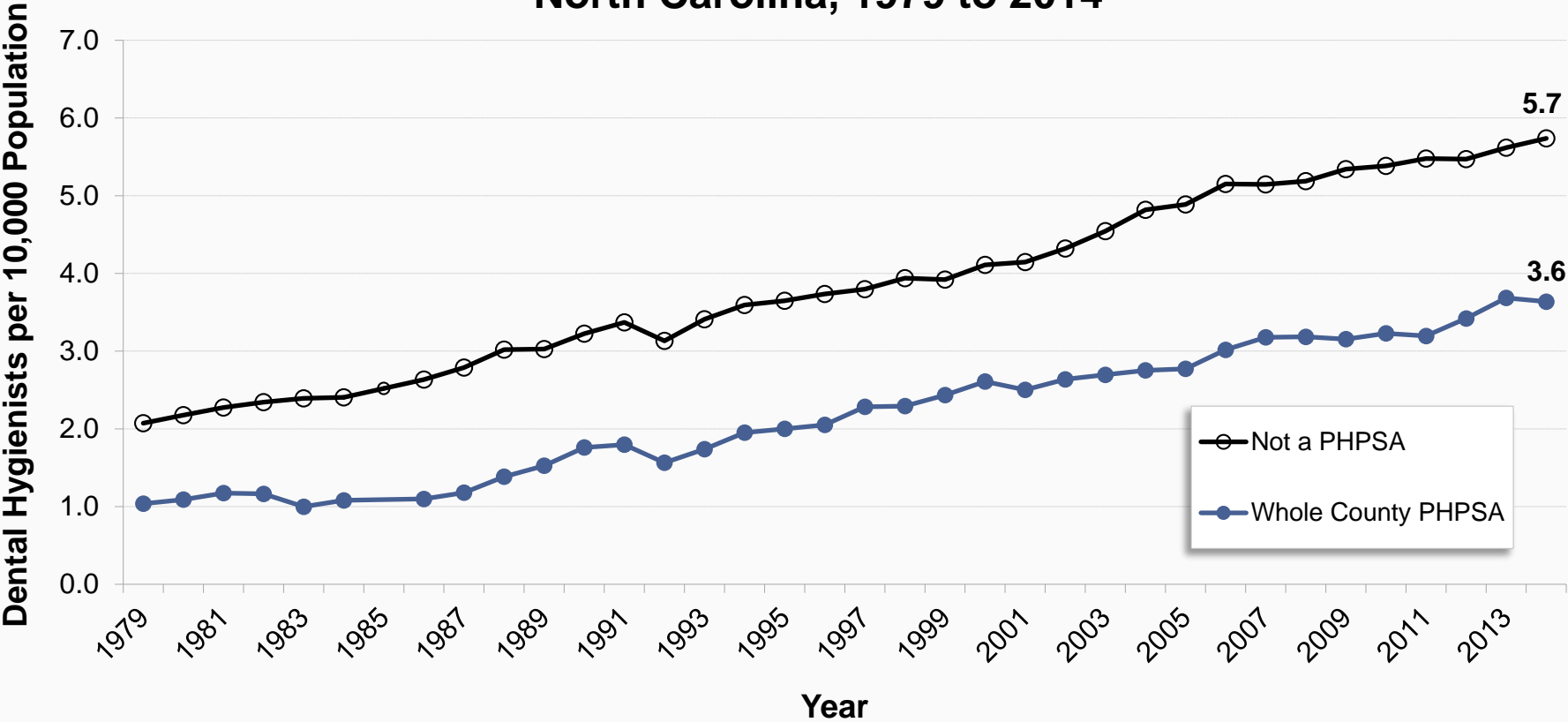
NC Dentists vs. Dental Hygienists in Metropolitan and Nonmetropolitan Counties, 2014



Sources: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Source for Metropolitan: Office of Management and Budget, 2013.

Unlike dentists, hygienists experienced some growth in supply in NC's most underserved counties

Dental Hygienists per 10,000 Population by Persistent Health Professional Shortage Area (PHPSA) Status North Carolina, 1979 to 2014



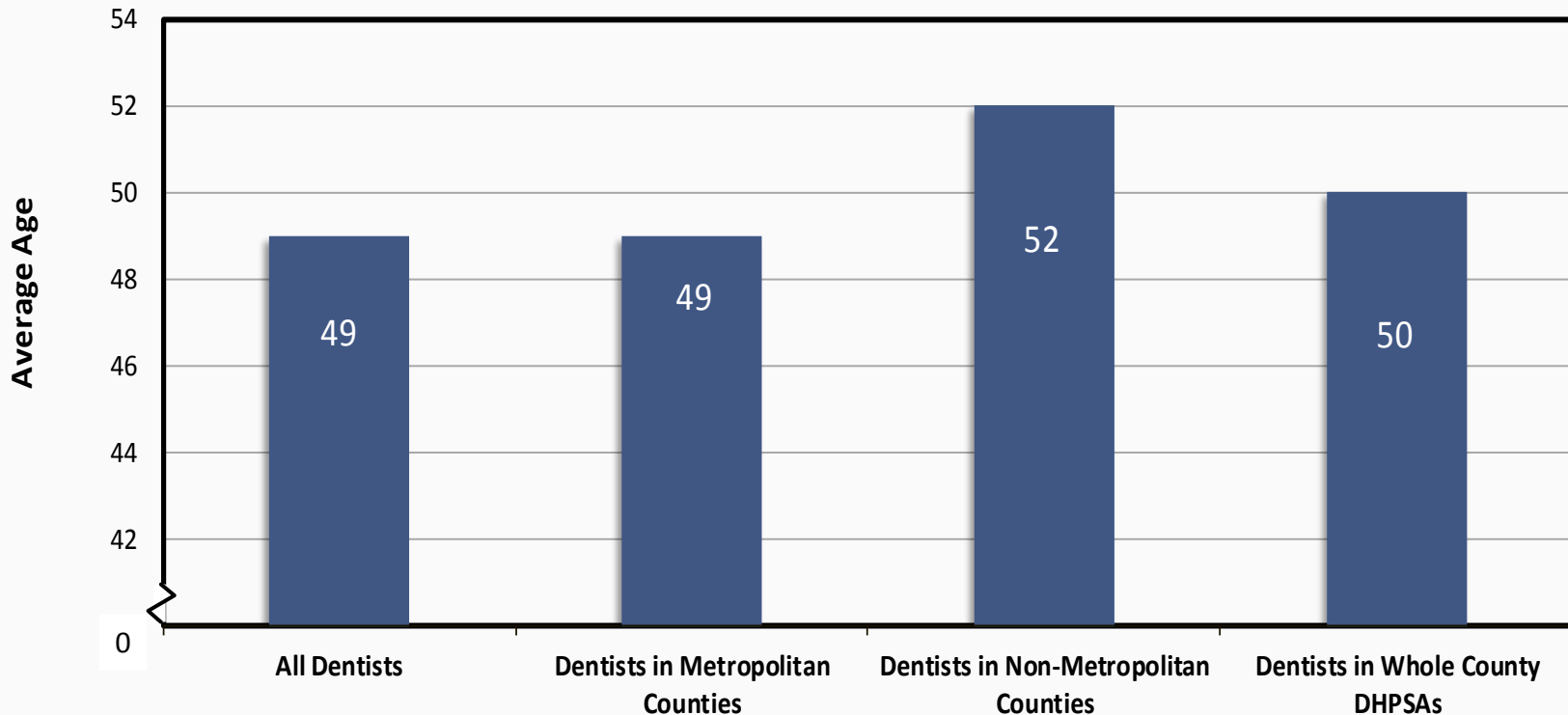
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Demographic and Practice Characteristics

North Carolina's dental workforce is graying

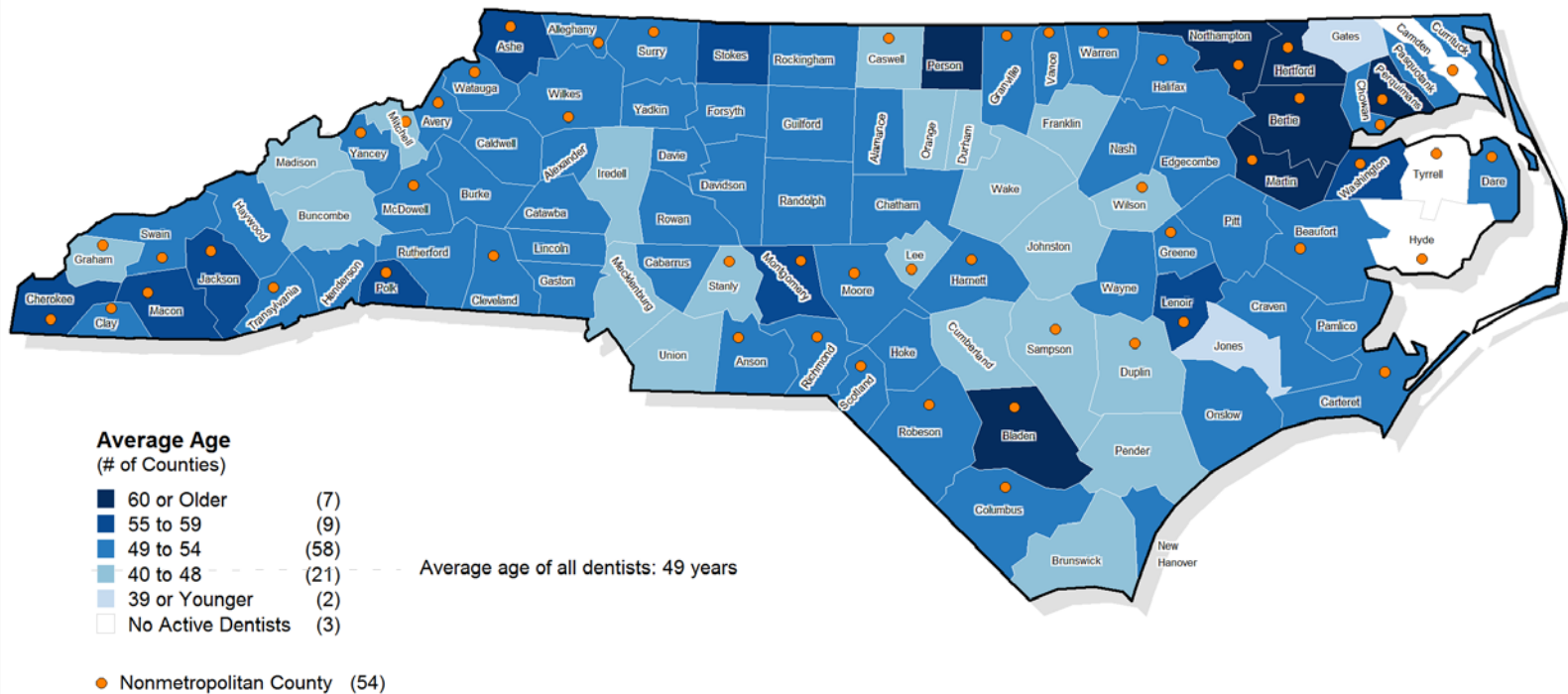
Average Age of NC Dentists by Region, 2014



7 counties in NC have dentists whose average age is 60 years or older

Rural, contiguous counties with older dentists are a concern

Average Age of Dentists by County North Carolina, 2014



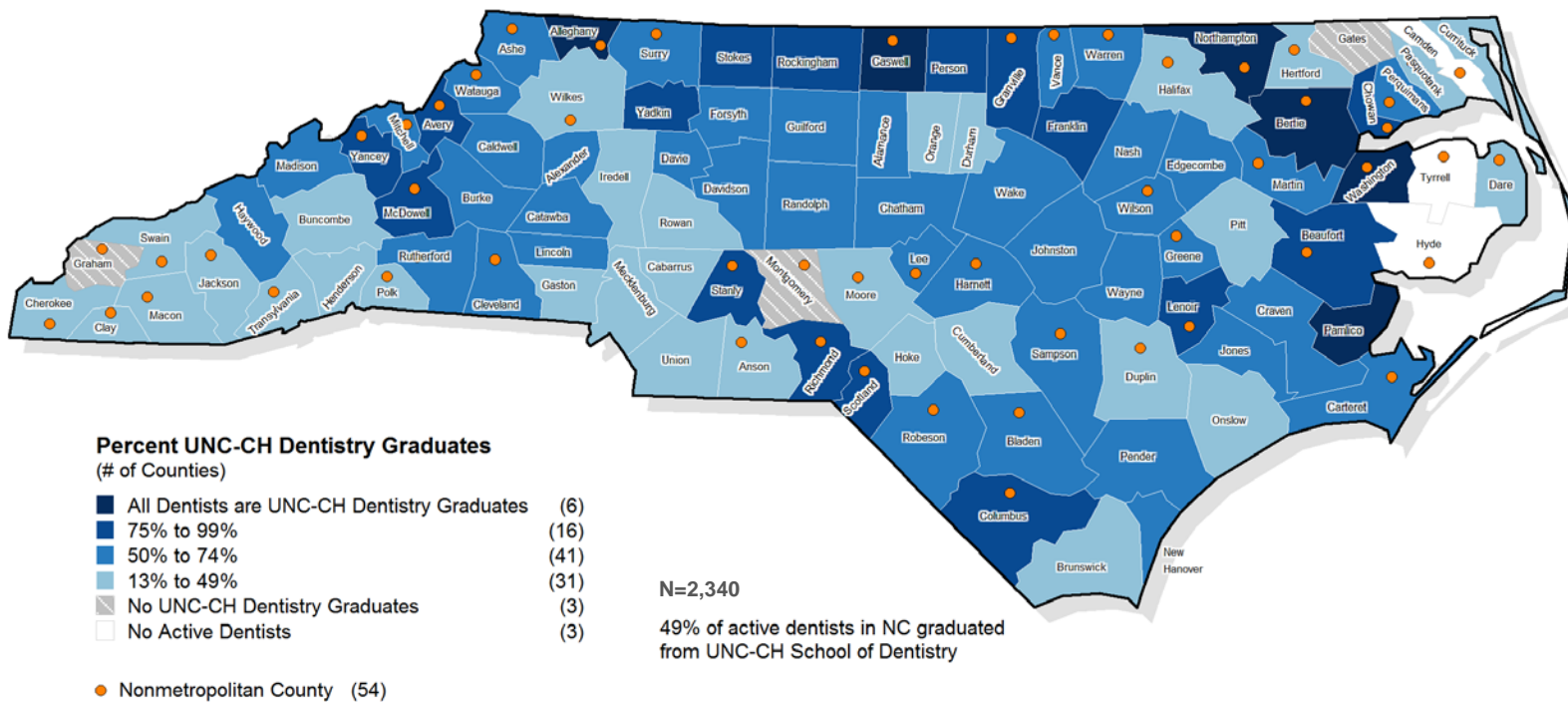
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Half of NC's dentist workforce graduated from UNC

Percent of Dentists Who Graduated From UNC-Chapel Hill School of Dentistry North Carolina, 2014

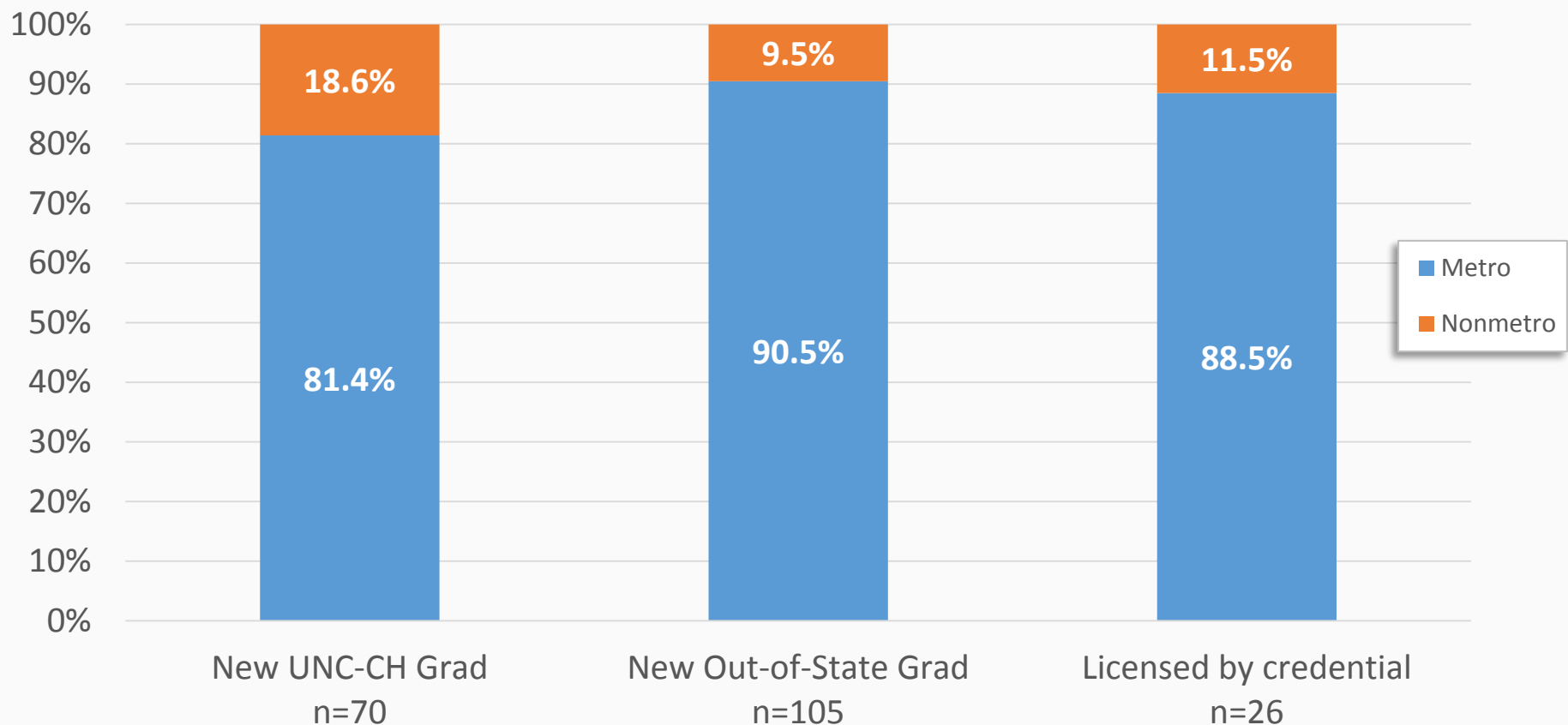


Source: North Carolina Health Professions Data System, with data derived from the North Carolina State Board of Dental Examiners, 2014.

Note: Data include dentists actively practicing in North Carolina as of October 31, 2014. "Core Based Statistical Area" (CBSA) is the US Census Bureau and Office of management and Budget collective term for Metropolitan and Micropolitan Statistical Areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs, effective March 2013. Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

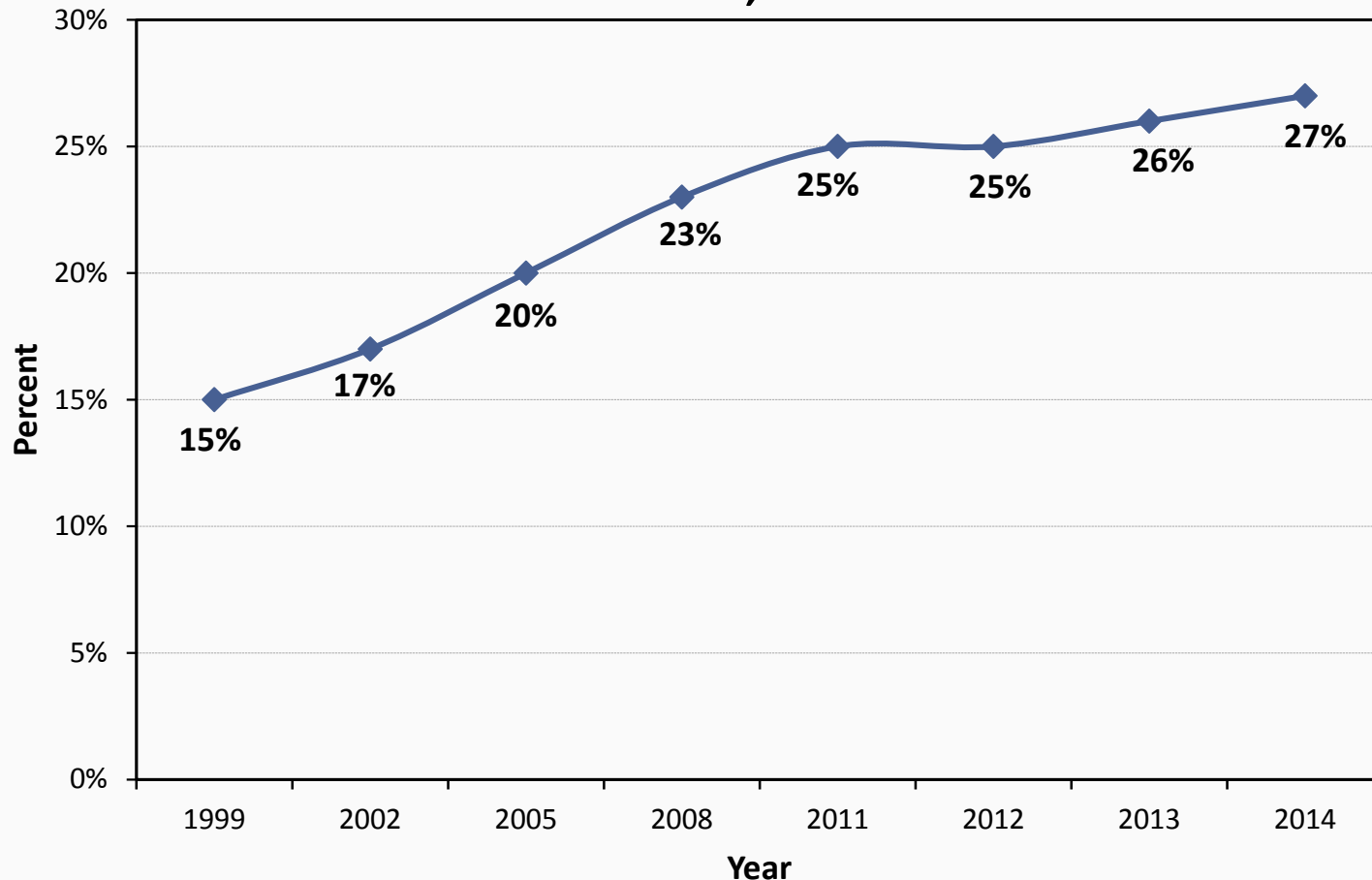
But new UNC-CH grads more likely to practice in rural areas

Practice Location of Newly Licensed Dentists, North Carolina, 2014



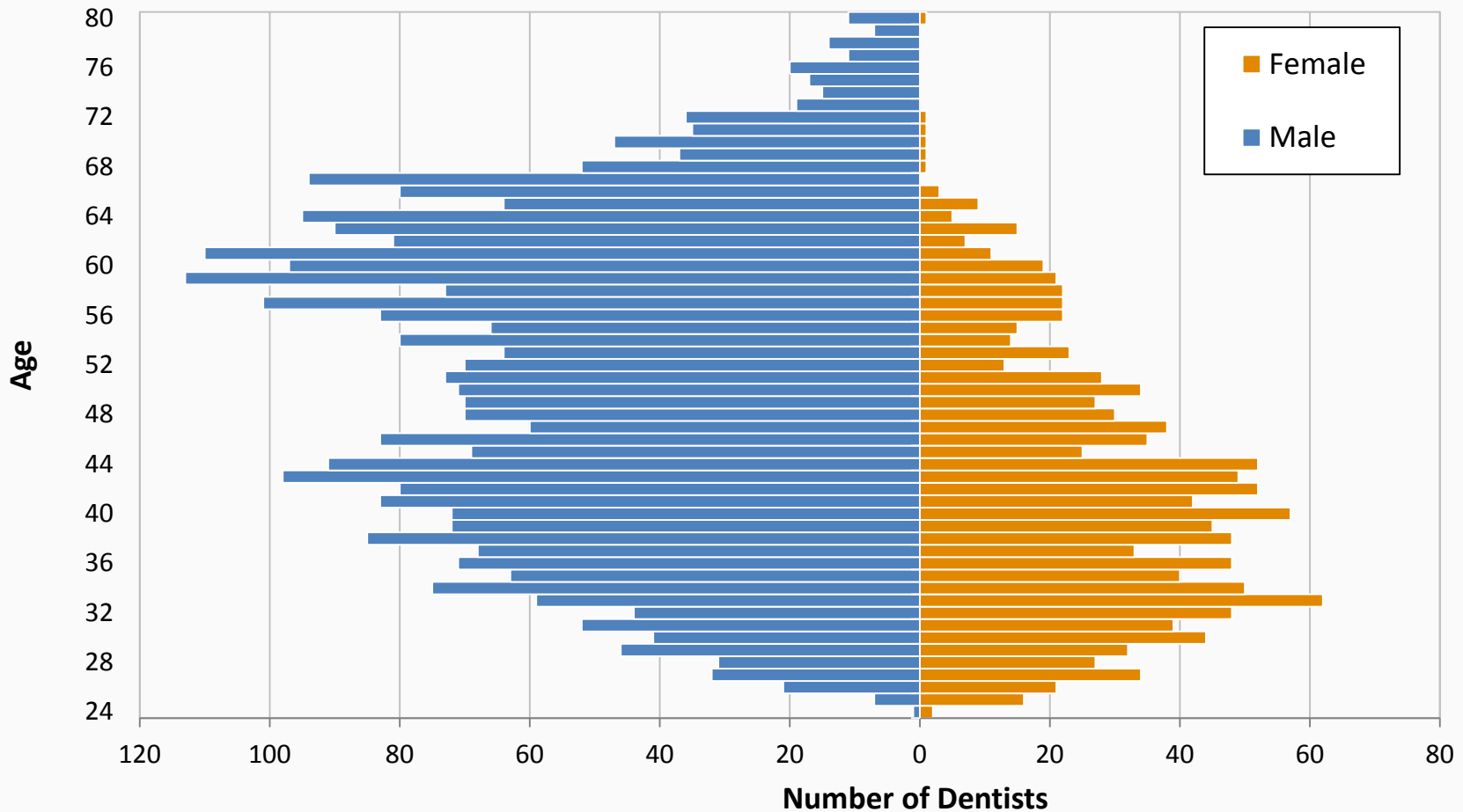
Percent of women in workforce increasing

Percentage of Dentists Who Are Female,
North Carolina, 1999-2014



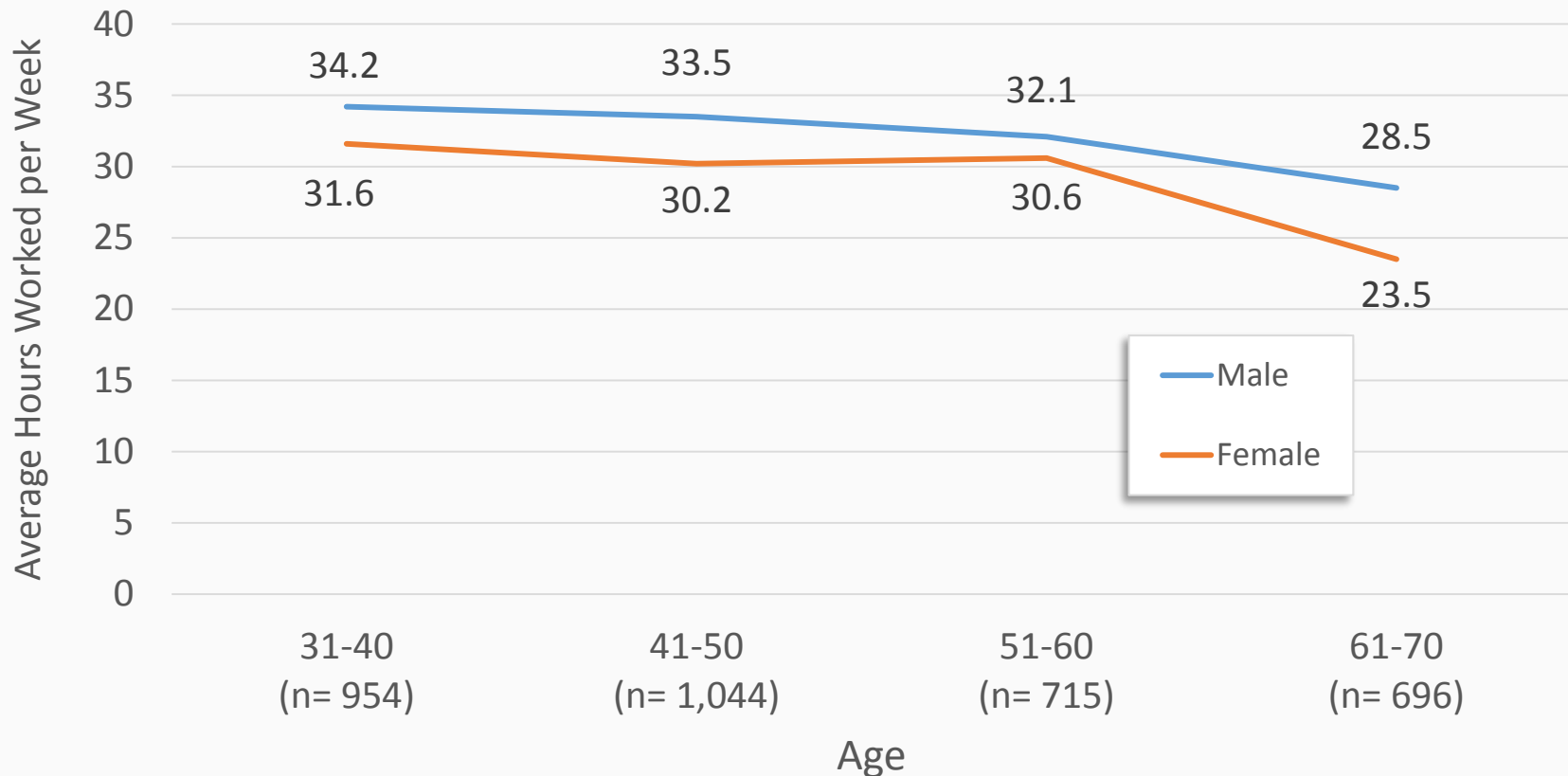
The number of women in the NC dentist workforce is increasing

NC Dentists by Age and Gender, 2014



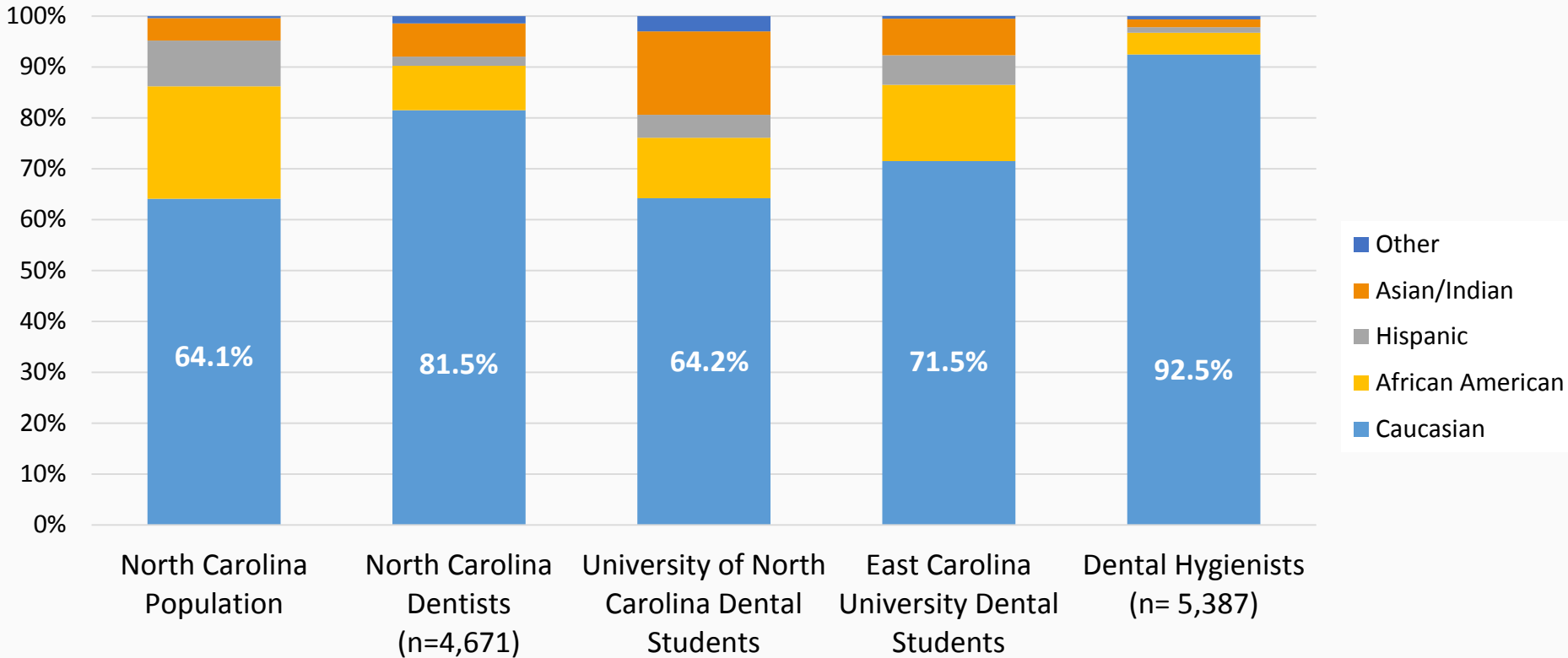
Average hours worked for both men and women peak between ages 31 to 40.

Average Number of Patient Care Hours Worked per Week by Age and Sex, North Carolina Dentists, 2014



Race/Ethnicity of dentist and dental hygienist workforce falls short of matching population diversity

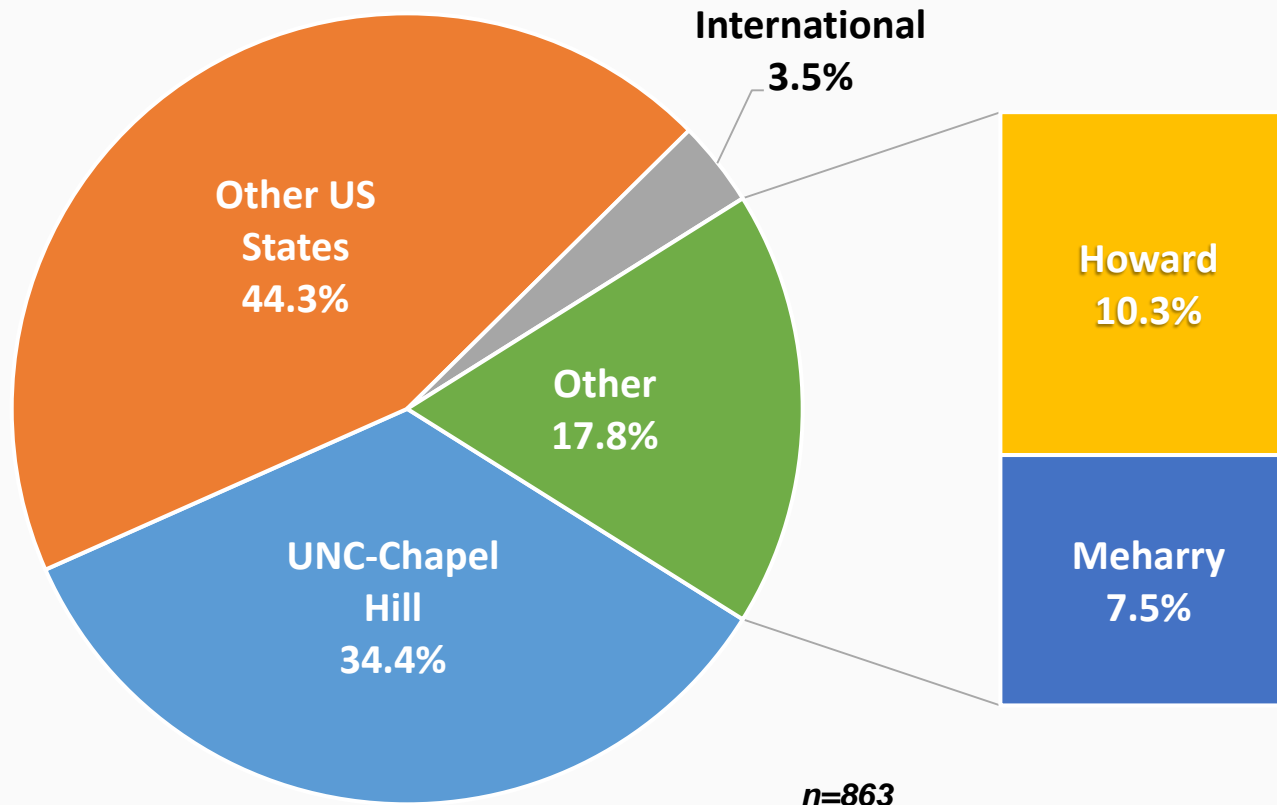
Diversity of North Carolina's Population versus Diversity of Dental Profession, 2014



Source: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Data include active, in-state dentists and dental hygienists as of October 31. 10 dentists and 411 dental hygienists missing race information were omitted from analyses. Population data from US Census. Student data from University of North Carolina at Chapel Hill and East Carolina University for the graduating classes of 2015-2019.

Most of NC's non-white dentists are educated out of state

Non-White Dentists by School North Carolina, 2014

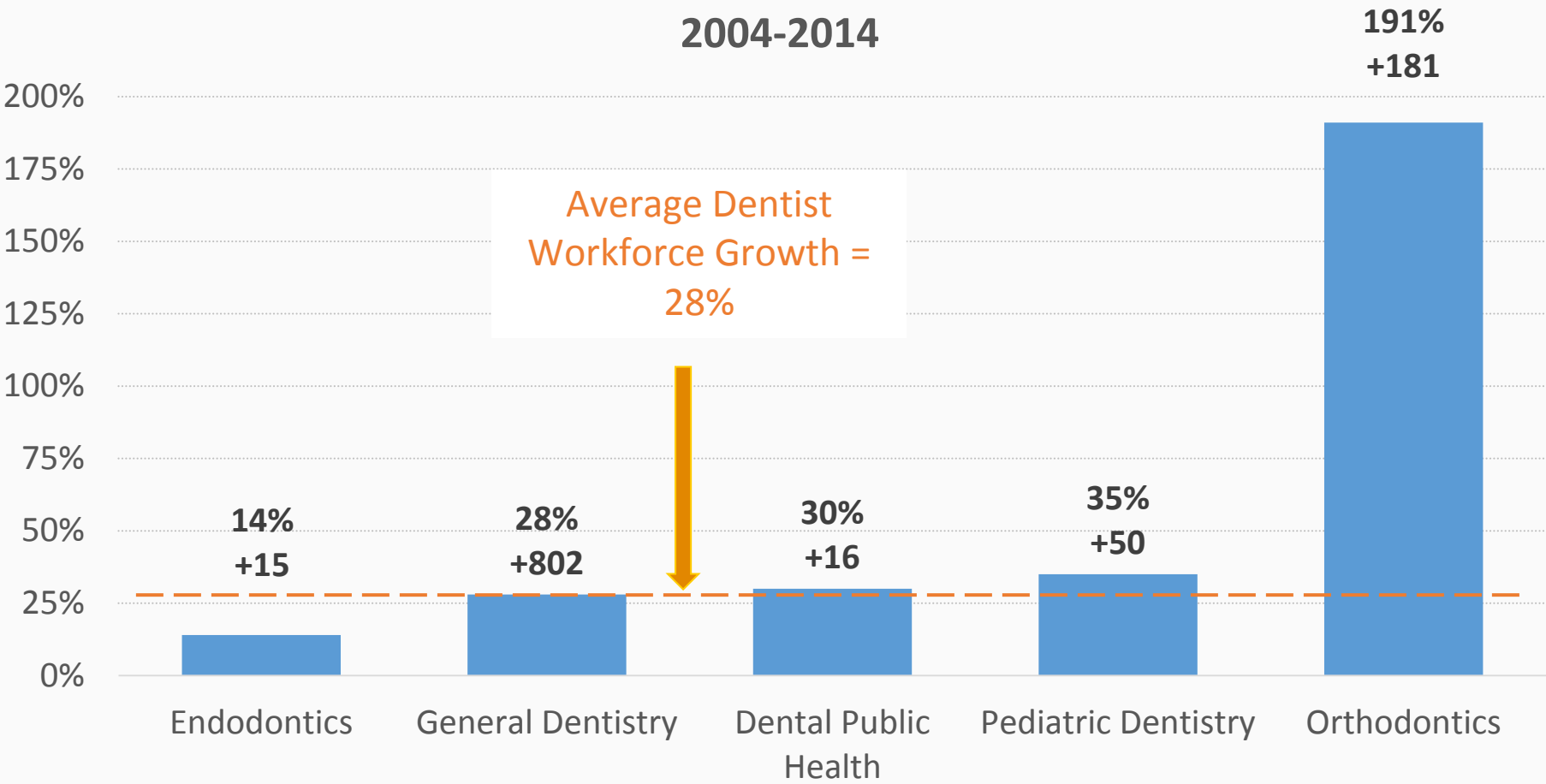


About three out of four North Carolina dentists are in general practice

Specialty 2014	
<i>General Practice</i>	78% (3,618)
Orthodontics	6% (276)
Pediatric Dentistry	4% (191)
Oral Surgery	4% (180)
Endodontics	3% (123)
Periodontics	3% (123)
Public Health	2% (69)
Prosthodontics	1% (66)
Oral/Maxillofacial Radiology	<1% (7)
Oral Pathology	<1% (5)

Orthodontists are the fastest growing specialty

Percent Growth by Dental Specialty, NC,
2004-2014



Sources: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2004-2014.

Medical Students

Measuring return on investment of public funds spent on education

- Policy focus on measuring the “social accountability” of medical education
- Importance of tracking graduates and using data to inform program planning and workforce policy
- What is role of NC’s medical schools in improving supply, distribution and diversity of the workforce?
- Since 1993, Sheps Center and AHEC have tracked medical students, now working to extend this work to include medical residents

Medical Student Tracking

- 1993: North Carolina Legislature concerned about primary care shortage
- Required four medical schools to develop programs to increase percentage of primary care graduates
- Set goal for UNC and ECU at 60%
- Set goal for Duke and Wake Forest at 50%
- Required that the Board of Governors track progress and report regularly to General Assembly

NC medical students: Retention of graduates in primary care after five years

What is the Class of 2009 Doing in 2014?

School	2009 Graduates	% in Primary Care (Anywhere in US)	% in Primary Care (in NC)
Duke	102	23%	5%
ECU	63	52%	30%
UNC-Chapel Hill	154	34%	16%
Wake Forest	104	22%	10%
Total	423	29%	14%

Prepared by the North Carolina Health Professions Data System and the North Carolina AHEC Program.

Source: Duke Office of Medical Education, UNC-CH Office of Student Affairs, ECU Office of Medical Education, Wake Forest University SOM Office of Student Affairs, Association of American Medical Colleges, and the NC Medical Board.



Retention in North Carolina of Class of 2009 in 2014: Primary Care

NC Medical Students: Retention in Primary Care in NC's Rural Areas

Total Number of 2009 graduates in training of practice as of 2014:

423

Initial residency choice of primary care in 2010

218 (52%)

In training/practice in primary care in 2014:

121 (29%)

In primary care in NC in 2014:

59 (14%)

In PC in rural NC:

5 (1%)

Class of 2009
(N=427 graduates)

Transformed health system will require transformed workforce

Health systems, AHEC, universities, community colleges, regulators, professional bodies need to work together to prepare

- Health professionals already in the workforce to:
 - take on new roles
 - shift to community settings
 - alter the types of services they provide
- New types of health professionals with competencies required in new models of care
- New graduates and existing workers to better function in team-based models of care

Questions for Discussion

- What are innovative solutions to address NC's population oral health needs?
 - Are there ways to provide better care to NC's most underserved settings?
- How can positions in underserved settings be designed in a way that fills population oral health needs and gives providers career opportunities/satisfaction?
- How can networks of specialty care providers be developed for underserved populations?

Questions?

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