

NC's Oral Health Workforce: Distribution, Diversity, and Access to Care

Julie Spero, MSPH

with Jacqueline Burgette, Erin Fraher,

Evan Galloway, Katie Gaul, Tom Ricketts

Program on Health Workforce Research and Policy

NC Dental Public Health Educational Conference

May 10, 2017



UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Who we are and what we do



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

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

- 37 years of continuous, complete licensure (***not survey***) data on 19 health professions from 11 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**



Key takeaways from this presentation

- Concerns about NC dentist supply
 - Dentists are geographically maldistributed
 - Progress to be made on race & gender diversity
- You can explore the data in our interactive website
 - <https://nchealthworkforce.sirs.unc.edu/>
- Dental schools help shape NC's workforce
 - Growing our own dentists
- Other states are changing what providers do
 - Sometimes SOP, sometimes not



What this presentation covers...and what it doesn't

I am a patient with an oral health need. Can I get care?

- Access → Is there a provider available?

- Cost → Can I afford care?

Oral Health Need in NC

- 86 NC counties met federal criteria as a Dentist Health Professional Shortage Area in 2016
- In NC in 2014, 2.5% of ED visits were related to dental conditions, compared to 1-2% in US¹

1. Zizzi A. A retrospective analysis of dental provider distribution and emergency department use for dental care in North Carolina. Unpublished master's paper submitted to UNC-CH School of Public Health 8 May 2017.



Disproportionate use of ED for dental reasons for patients who are Black...

Race/Ethnicity of Patients Treated for Dental Reasons at Emergency Departments, NC, 2014		
Race/Ethnicity	Percent of Dental ED Visits	Percent of State Population
White, non-Hispanic	54	65
Black, non-Hispanic	37	21
Other race, non-Hispanic	3	6
Hispanic, any race	3	9
Unknown	2	N/A

1. Zizzi A. A retrospective analysis of dental provider distribution and emergency department use for dental care in North Carolina. Unpublished master's paper submitted to UNC-CH School of Public Health 8 May 2017.



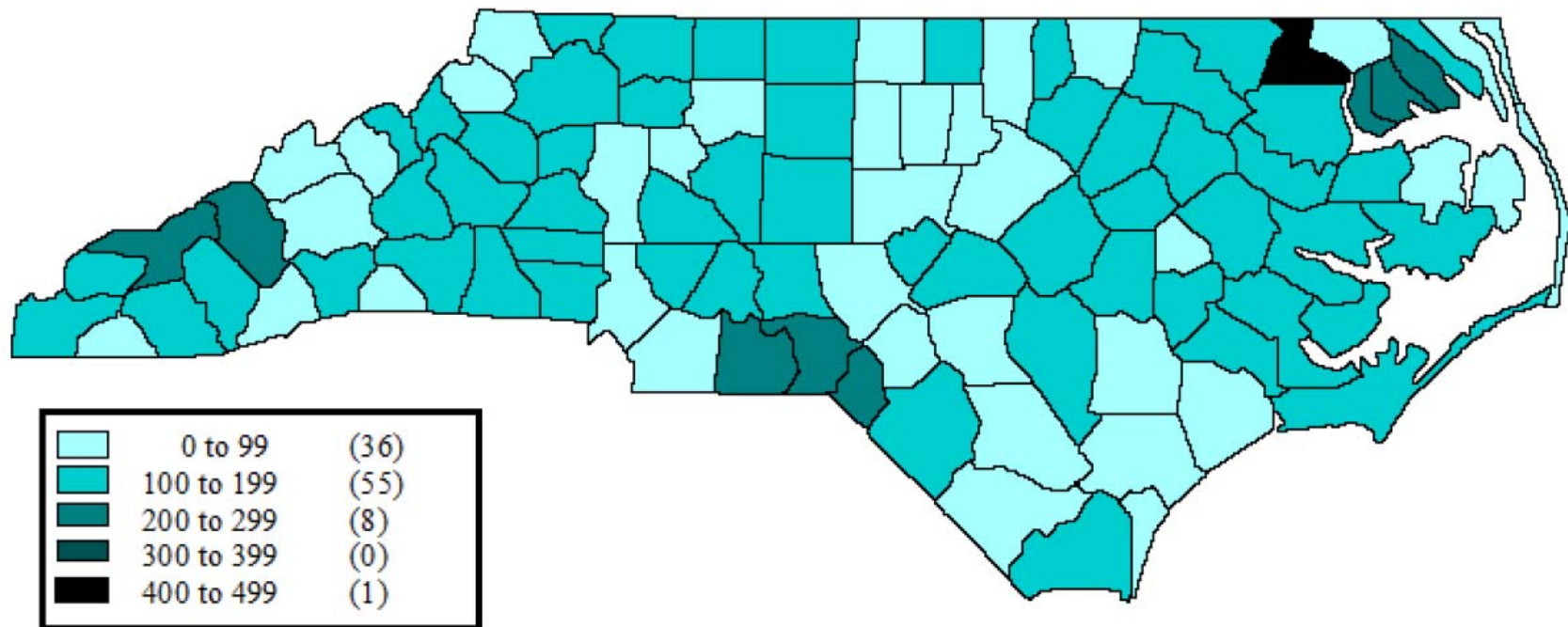
...are self-pay or Medicaid patients,
and live in rural areas.

Characteristics of Patients Treated for Dental Reasons at Emergency Departments, NC, 2014	
Payer	Percent of Dental ED Visits
Self-pay	52
Medicaid	25
Medicare	6
Private	16
Other	1
MSA Designation	Dental ED Visits per 10,000
Metro	98
Non-Metro	141
State Average Rate	109

1. Zizzi A. A retrospective analysis of dental provider distribution and emergency department use for dental care in North Carolina. Unpublished master's paper submitted to UNC-CH School of Public Health 8 May 2017.

Nine NC counties have highest ED dental visit rates

**Emergency Department Use for Dental Conditions
Visits per 10,000 Population
North Carolina, 2014**



1. Zizzi A. A retrospective analysis of dental provider distribution and emergency department use for dental care in North Carolina. Unpublished master's paper submitted to UNC-CH School of Public Health 8 May 2017.

Access to providers in rural areas reduces ED use for dental visits

“Higher density of dental providers was associated with lower rates of dental ED visits by patients with Medicaid in rural counties, but not in urban counties.”¹

1. Fingar KR, Smith MW, Davies S, McDonald KM, Stocks C, Raven M. 2015. Medicaid dental coverage alone may not lower rates of dental emergency department visits. *Health Affairs* 34(8), 1349-1357.

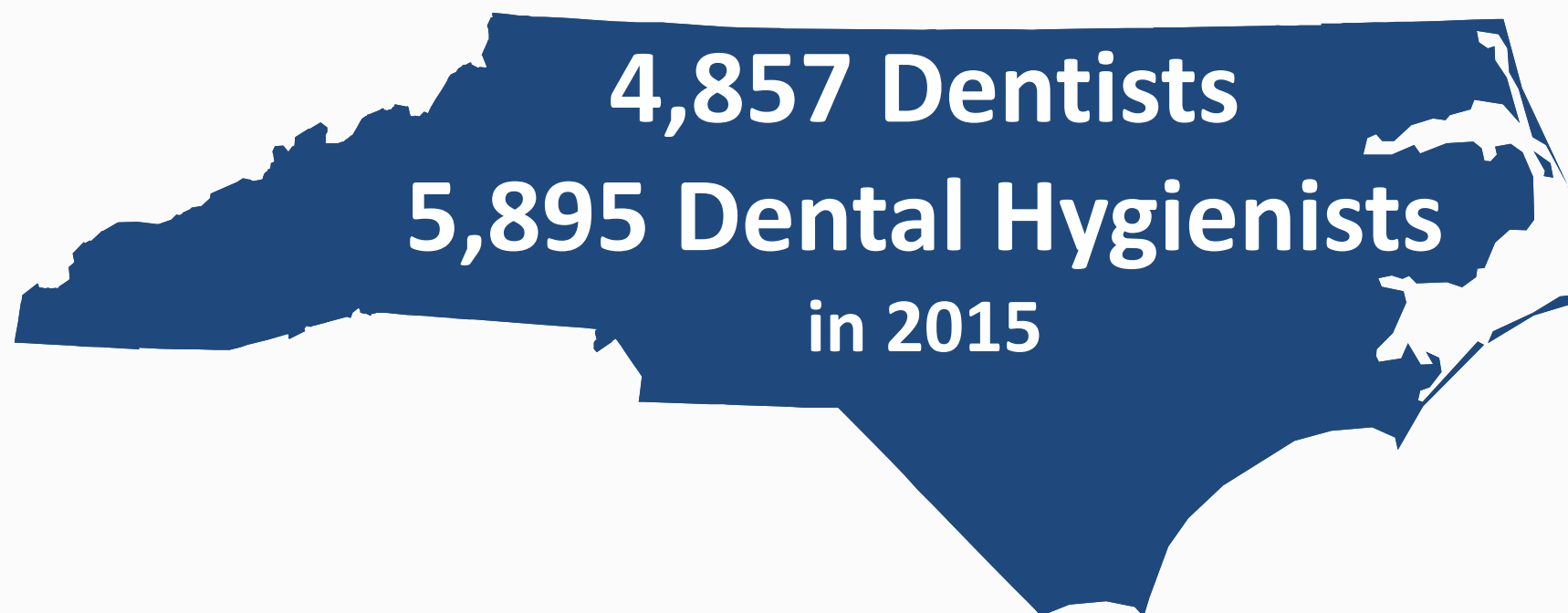


The Dental Workforce in NC



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

How many dentists and dental hygienists work in NC?



Sources: North Carolina Health Professions Data System, with data derived from the North Carolina Board of Dental Examiners, 2015. Data include all, active, in-state dentists and dental hygienists.

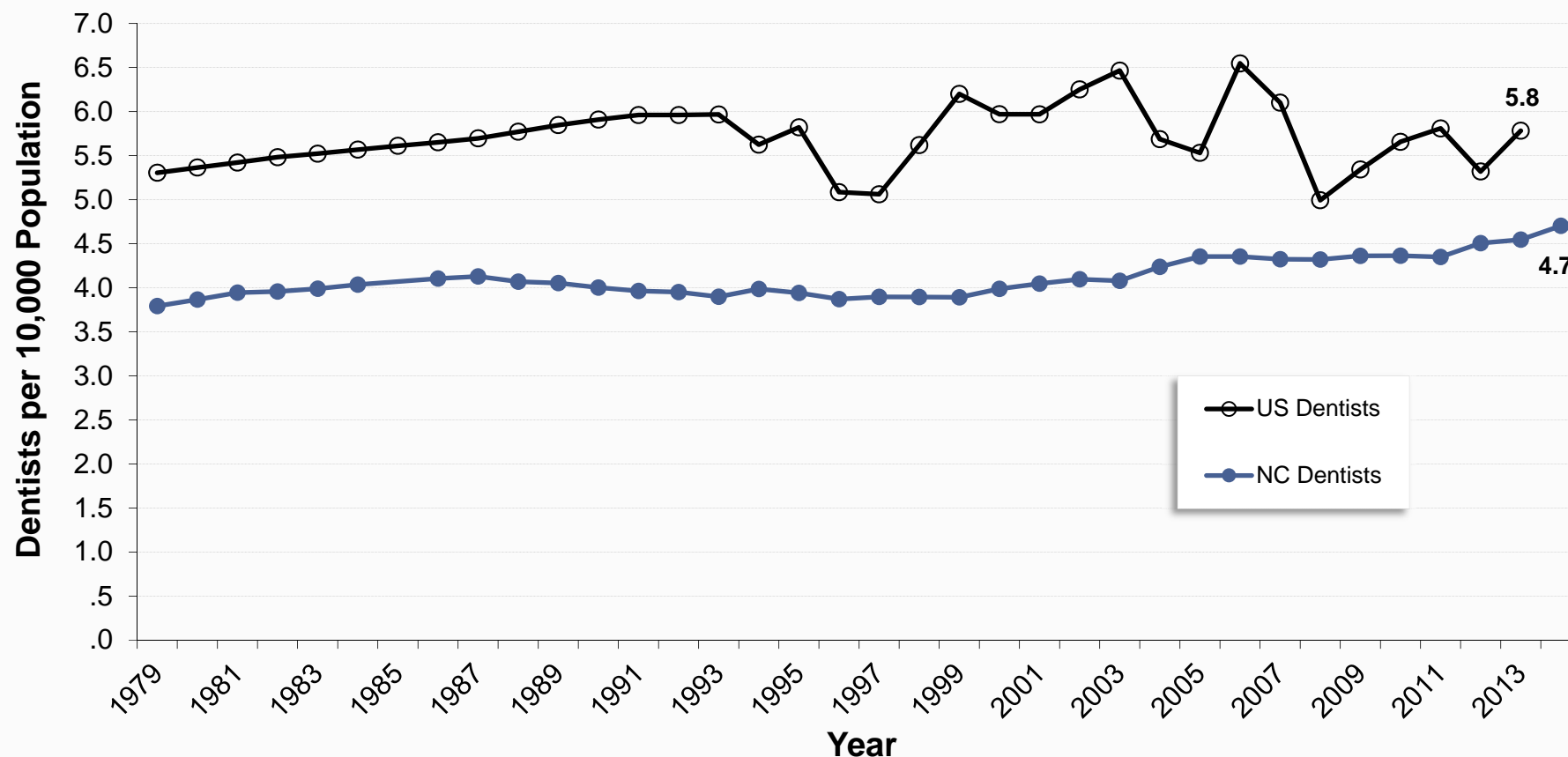
HRSA's NC workforce projections

- Dentist shortage will increase from 270 (2012) to 459 (2025)
- Dental hygienist surplus will increase to 858 (2025)

Source: Health Resources and Services Administration, 2015,
<http://bhpr.hrsa.gov/healthworkforce/supplydemand/dentistry/nationalstatelevelprojectionsdentists.pdf>

NC has consistently lagged behind US in dentists per capita

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



Positive news: NC has gained dentists per capita, although still ranks nationally in the bottom 5th

Dentists Working in Dentistry per 10,000 Population

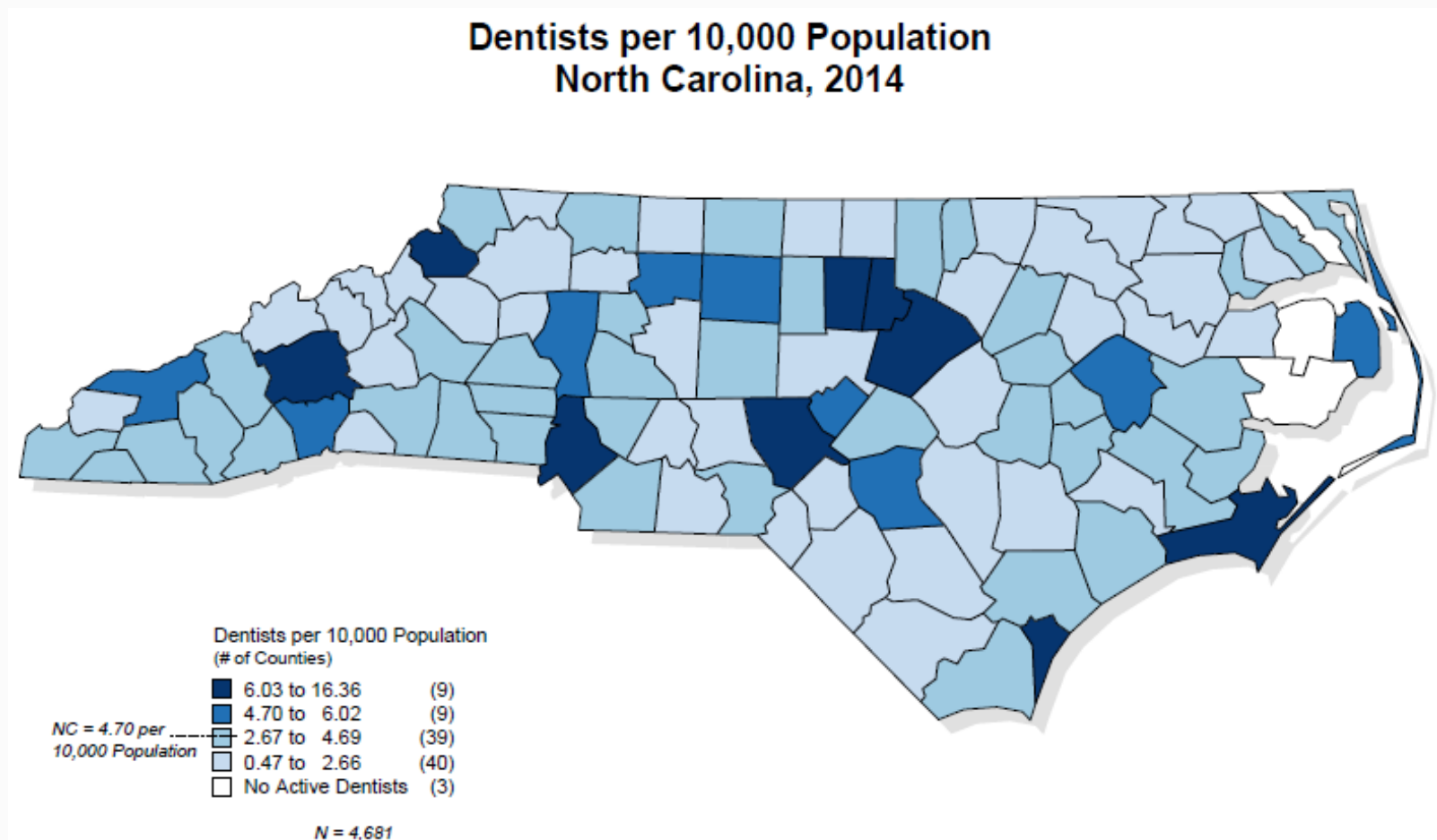
	2001		2005		2010		2015	
	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio
United States		5.7		5.9		5.9		6.1
Bottom Ranked								
North Carolina	47	4.2	41	4.5	43	4.7	39	5.0
Tennessee	30	5.1	30	4.9	36	4.8	40	5.0
West Virginia	34	4.8	38	4.5	42	4.7	41	4.9
Louisiana	38	4.6	46	4.4	38	4.8	42	4.8
Missouri	36	4.7	37	4.6	44	4.6	43	4.8
South Carolina	40	4.5	42	4.5	41	4.7	44	4.8
Indiana	35	4.7	40	4.5	45	4.6	45	4.8
Georgia	45	4.3	43	4.5	46	4.6	46	4.7
Delaware	44	4.4	45	4.4	47	4.4	47	4.6
Alabama	47	4.2	48	4.1	48	4.2	48	4.4
Mississippi	39	3.9	50	3.9	49	4.1	49	4.3
Arkansas	50	3.9	49	3.9	50	3.9	50	4.1

Source: Supply of Dentists in the U.S.: 2001-2015 (XLSX - Published February 2016). American Dental Association, Health Policy Institute analysis of ADA masterfile. Downloaded 1/4/2017 from <http://www.ada.org/en/science-research/health-policy-institute/data-center/supply-of-dentists>.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

The big issue is maldistribution: NC's dentists are concentrated in one fifth of the state's counties



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.

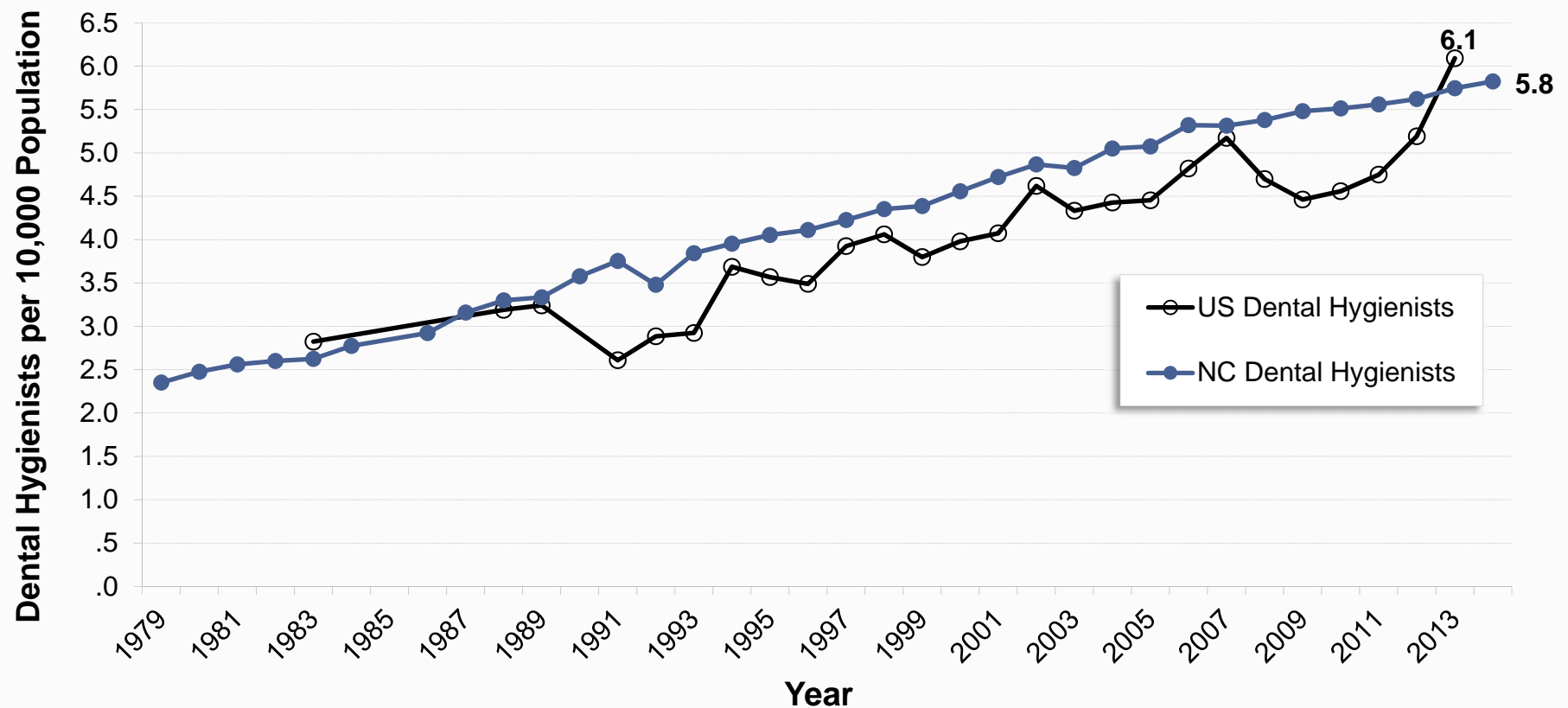
Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

NC has seen consistent growth in dental hygienists

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



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

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.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

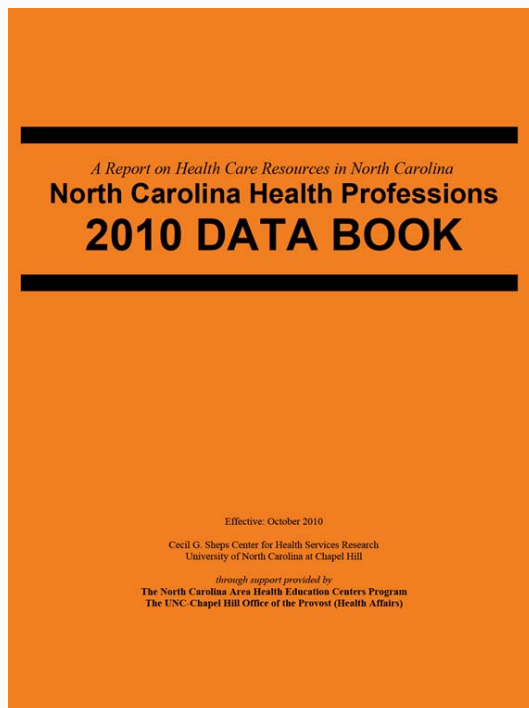
NC Health Professions Data System Website

launched May 2, 2017



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

The data book was the signature product of the HPDS



Durham

MSA county designation: Metropolitan

AHEC Region: Wake AHEC

■ 2013 ACTIVE HEALTH PROFESSIONALS*■

Physicians[§]

Non Federal Physicians	2,131
Primary Care Physicians	525
<i>Family Practice</i>	65
<i>General Practice</i>	5
<i>Internal Medicine</i>	156
<i>Obstetrics/Gynecology</i>	34
<i>Pediatrics</i>	124
<i>Other Primary Care</i>	141
Other Specialties	1,606
Physicians per 10,000 Population	74.5
Primary Care Physicians	18.4
per 10,000 Population	
Federal Physicians**	159

Dentists and Dental Hygienists

Dentists	203
Dental Hygienists	142

Nurses

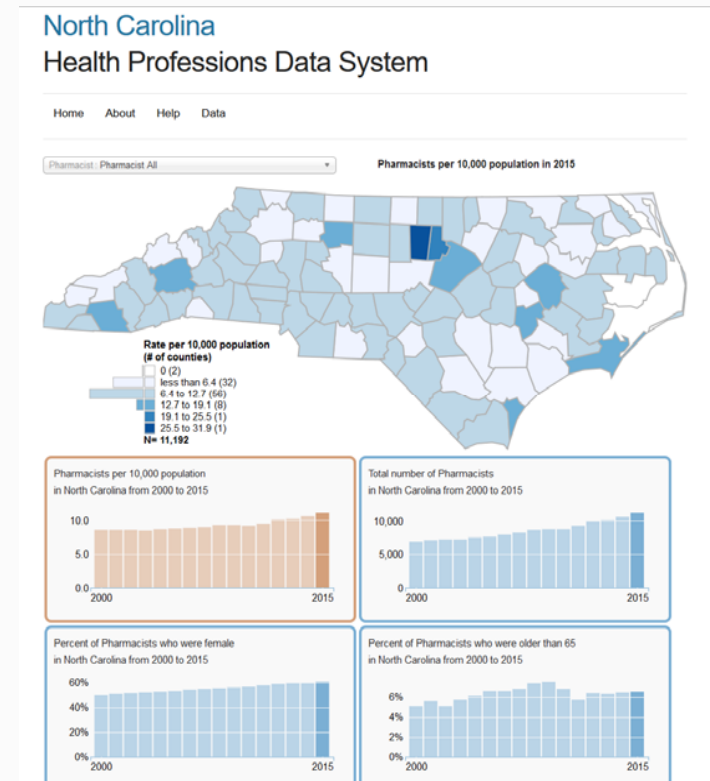
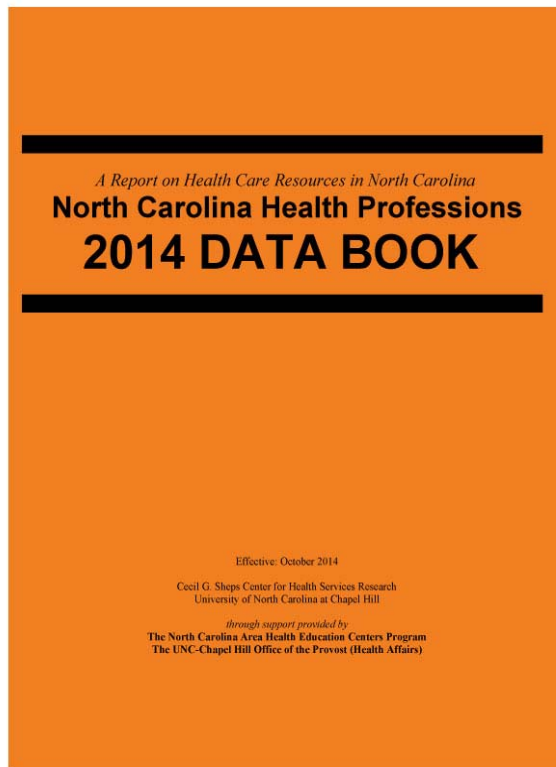
Registered Nurses	6,851
<i>Nurse Practitioners</i>	409
<i>Certified Nurse Midwives</i>	12
Licensed Practical Nurses	627

Other Health Professionals

Chiropractors	50
Occupational Therapists	191
Occupational Therapy Assistants	46
Optometrists	38
Pharmacists	738
Physical Therapists	355
Physical Therapist Assistants	32
Physician Assistants	333
Podiatrists	10
Practicing Psychologists	289
Psychological Associates	32
Respiratory Therapists	240



<https://nchealthworkforce.sirs.unc.edu/>



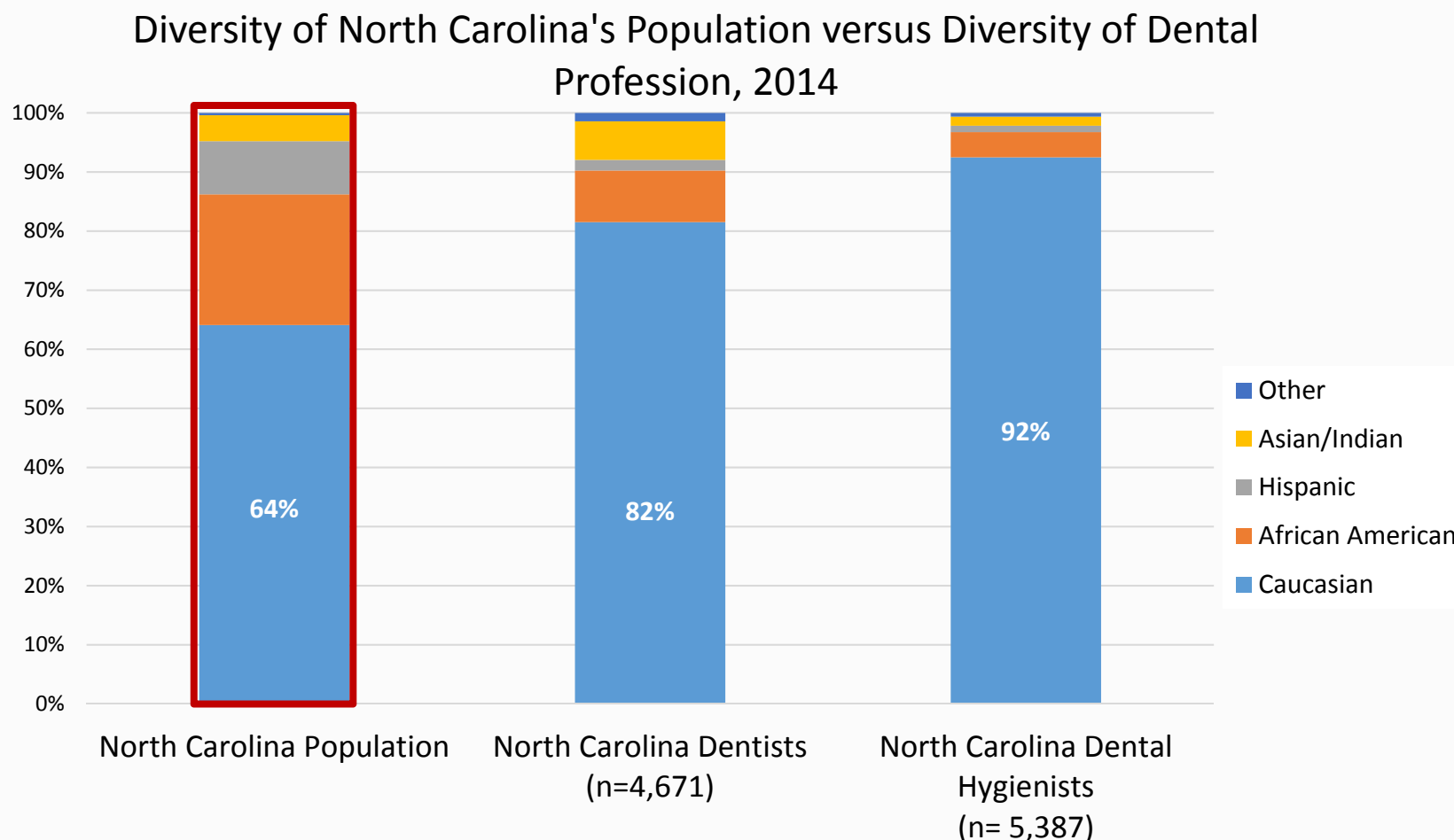
UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Racial & Ethnic Diversity



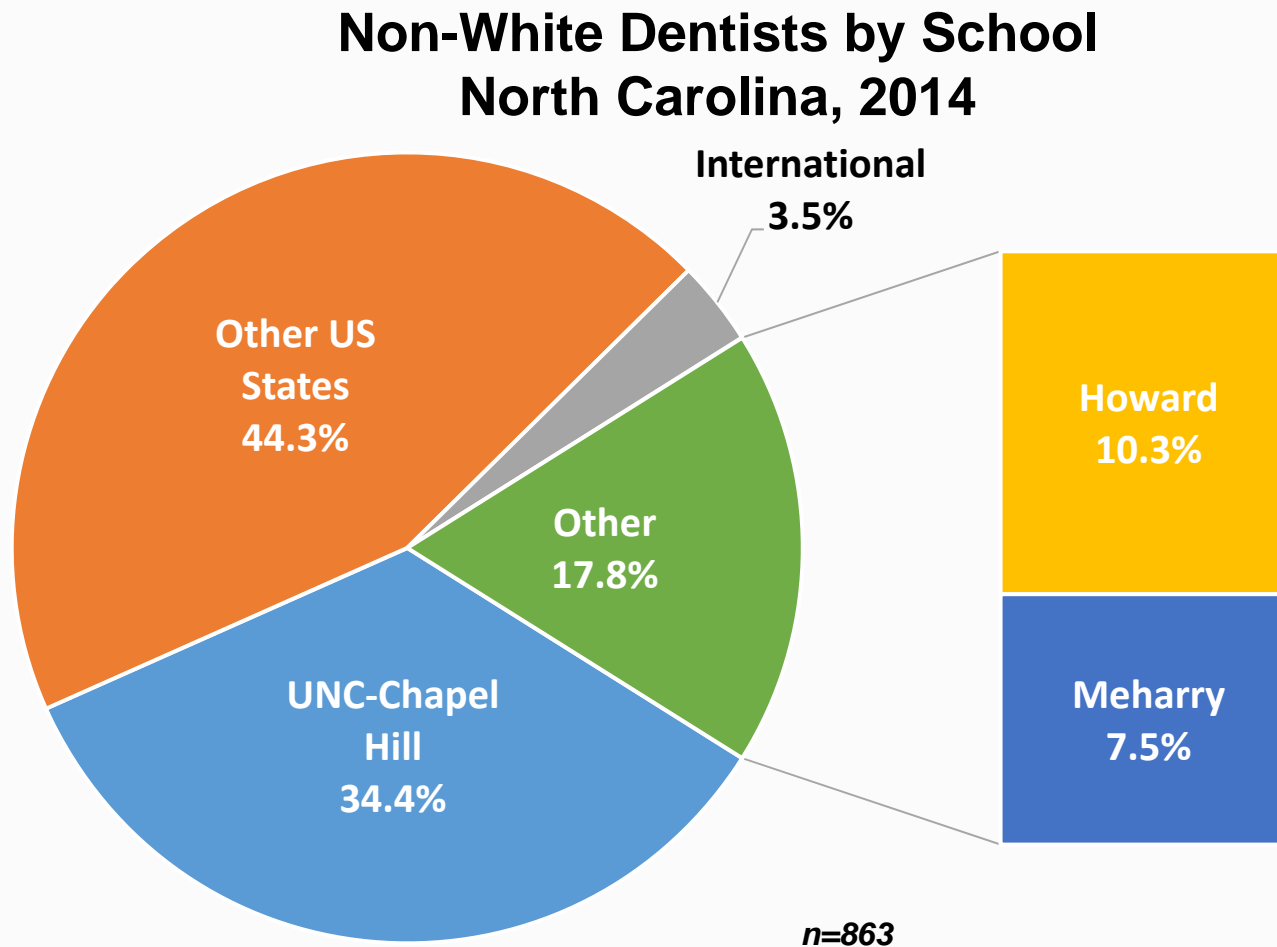
UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

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



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..

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



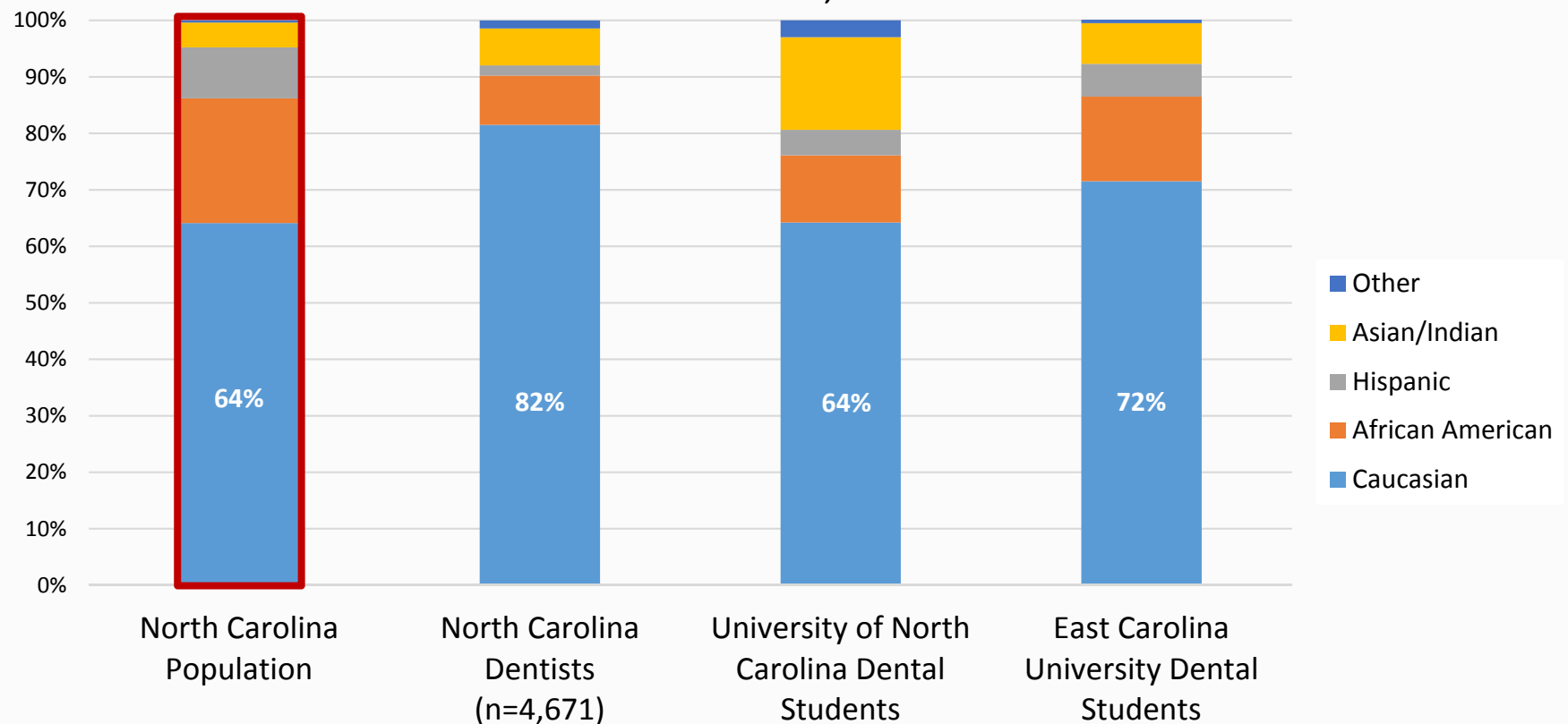
Sources: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Figures include active, instate dentists licensed in North Carolina as of October 31 of the respective year.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

UNC and ECU dental students more closely reflect NC's diverse population

Diversity of North Carolina's Population versus Diversity of NC Dentists and Dental Students, 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.



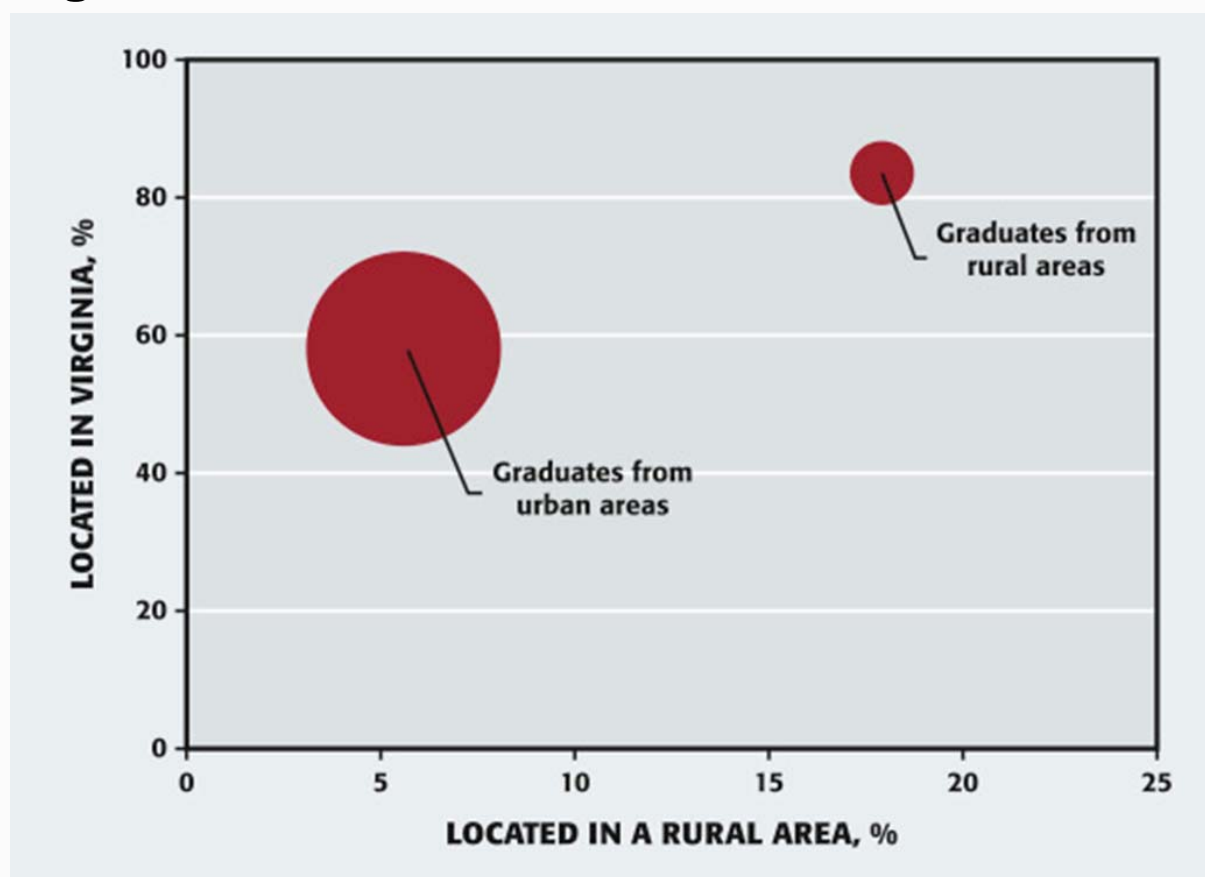
Education as a Policy Lever for Dentist Access in Rural Areas



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

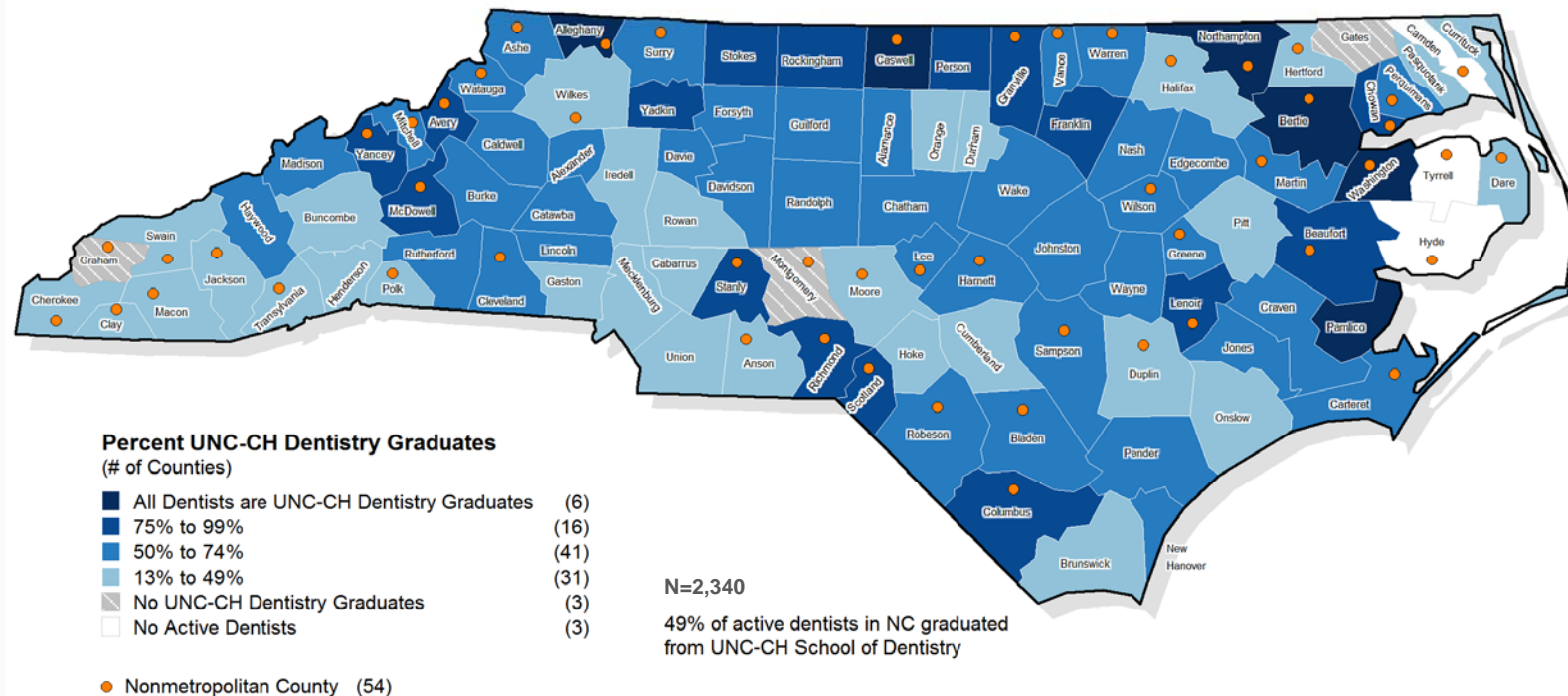
Dentists from rural places are more likely to practice in rural places

Virginia Commonwealth University Dental School Graduates practicing in VA and in rural areas, classes of 2000-2014



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.

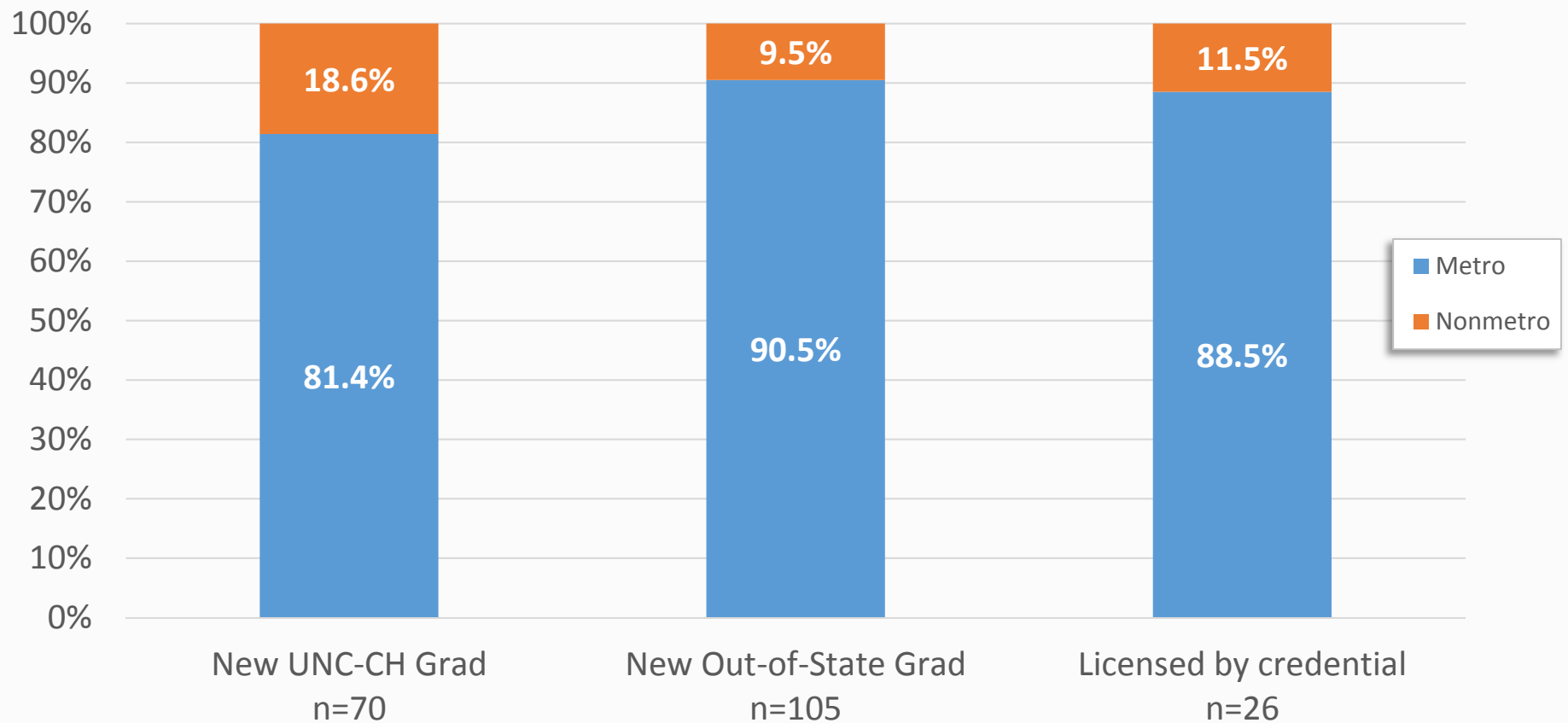
Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.



UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

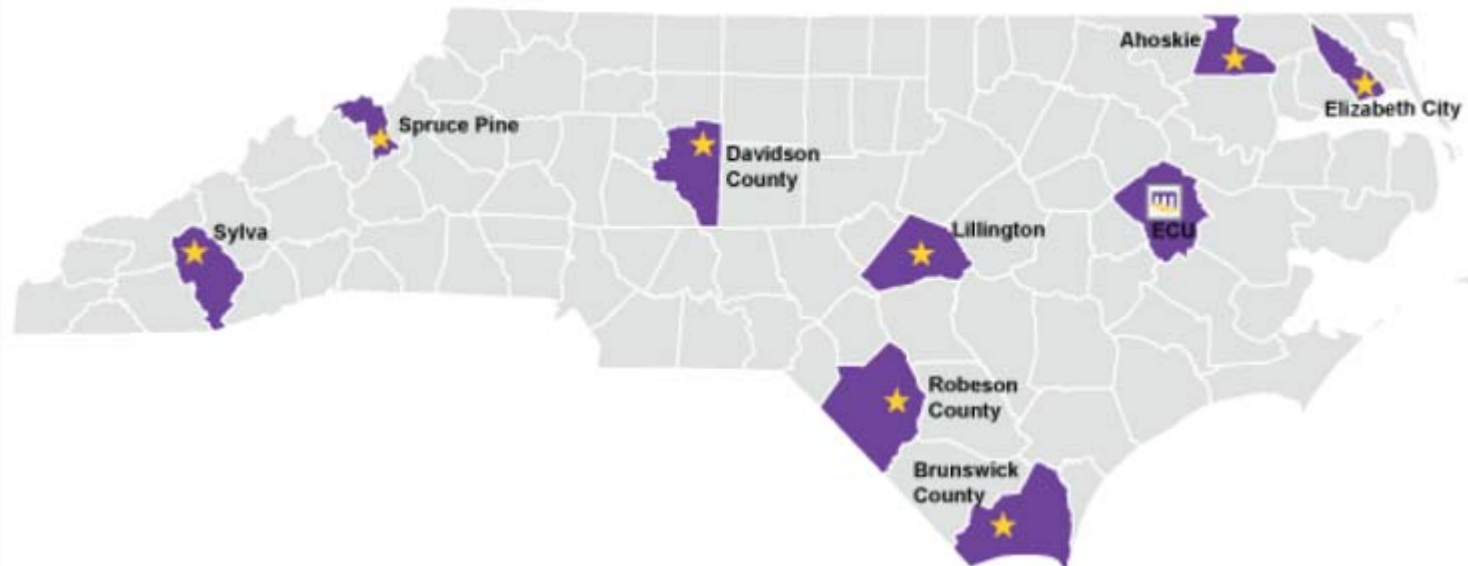
New UNC-CH grads more likely to practice in rural areas

Practice Location of Newly Licensed Dentists, North Carolina, 2014

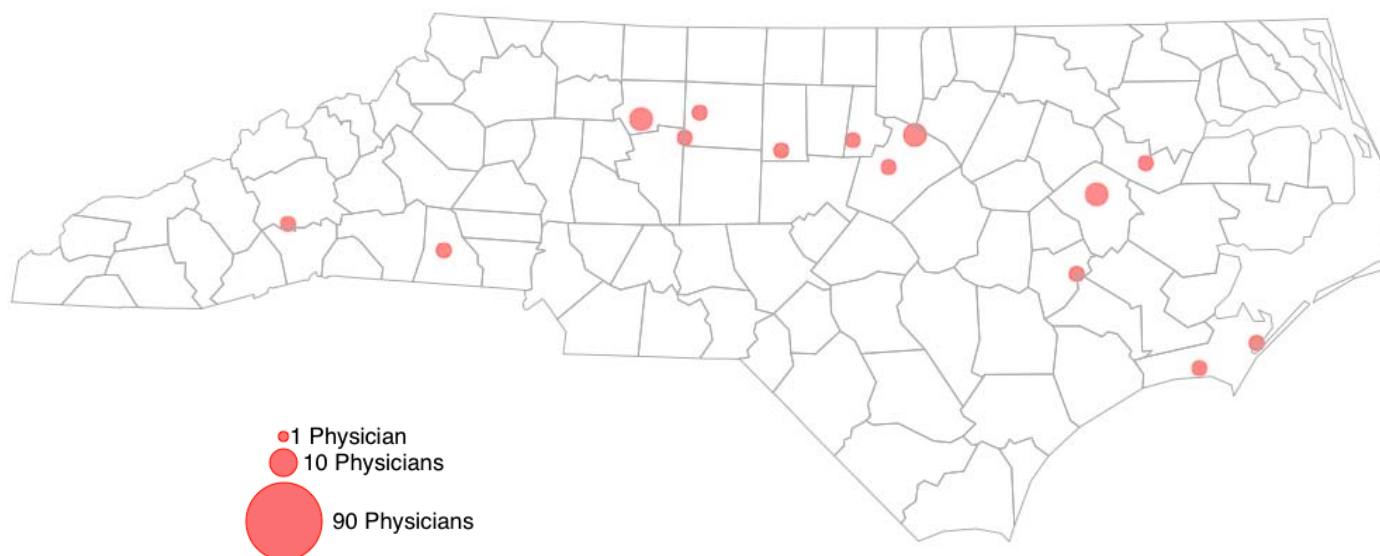


How will ECU's Dental School affect NC's dentist supply?

- Admit students who are NC residents
- Mission focused on underserved communities: train in Community Service Learning Centers
- 1st class graduated 2015 = it's too early to evaluate outcomes

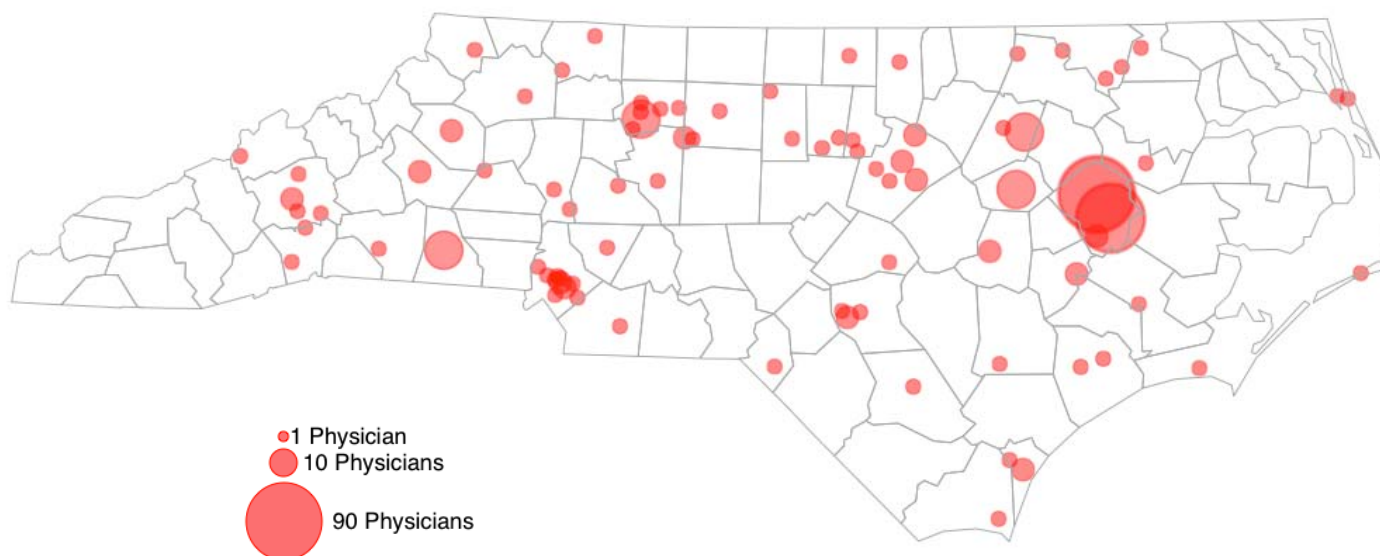


Graduates of Brody School of Medicine at East Carolina University 1985



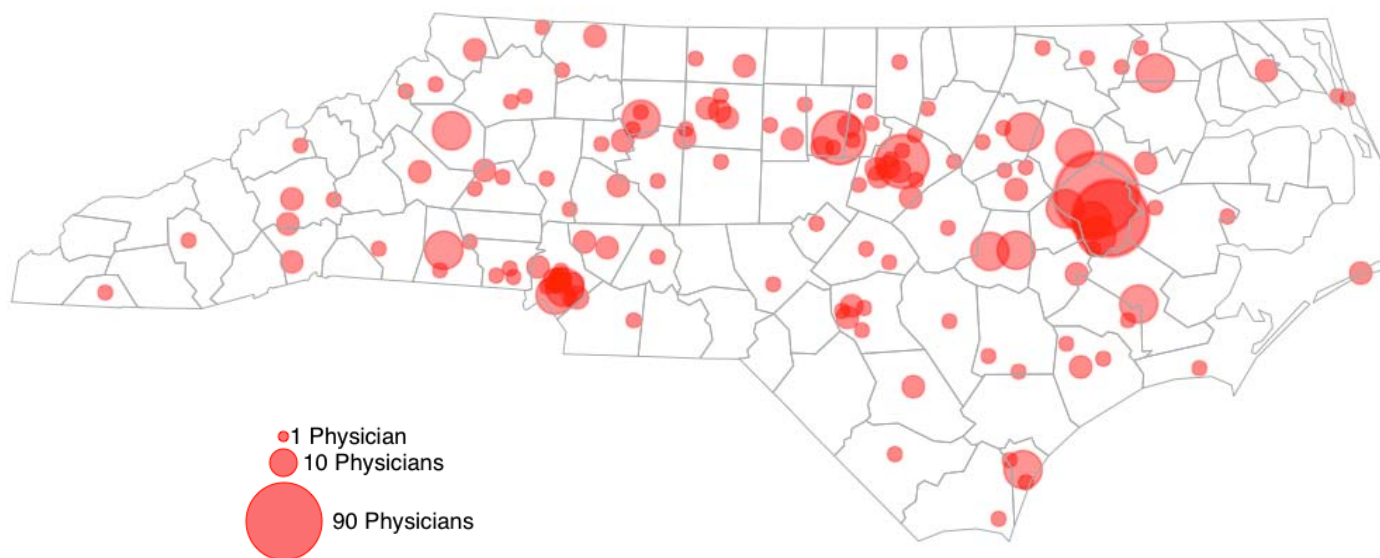
Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

Graduates of Brody School of Medicine at East Carolina University 1990



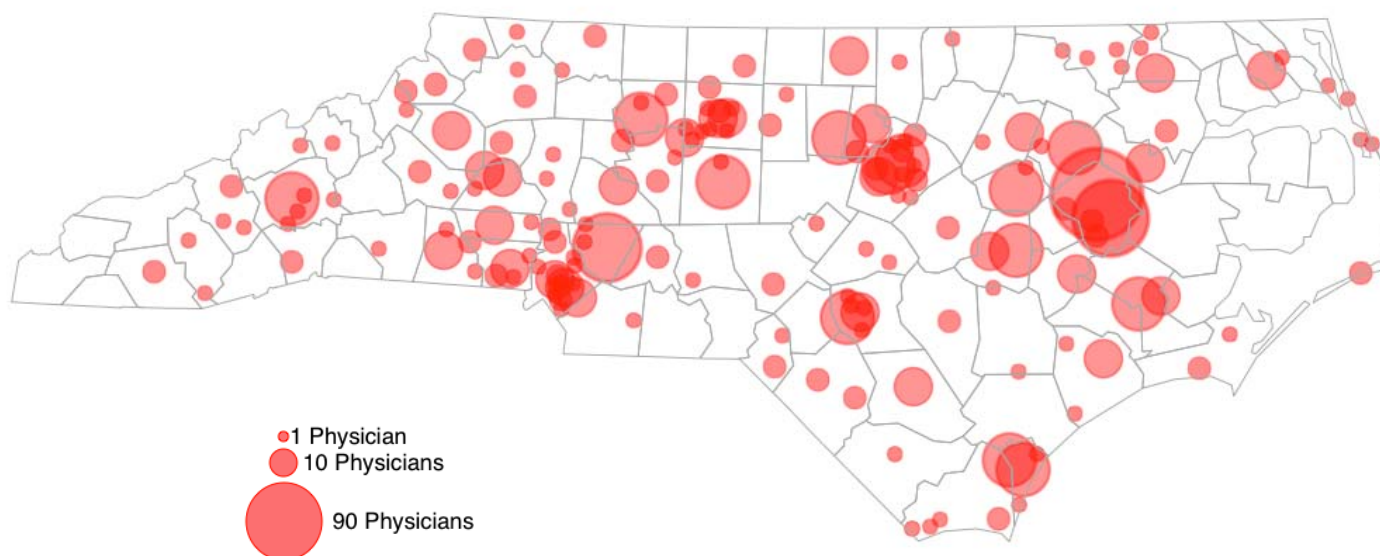
Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

Graduates of Brody School of Medicine at East Carolina University 1995



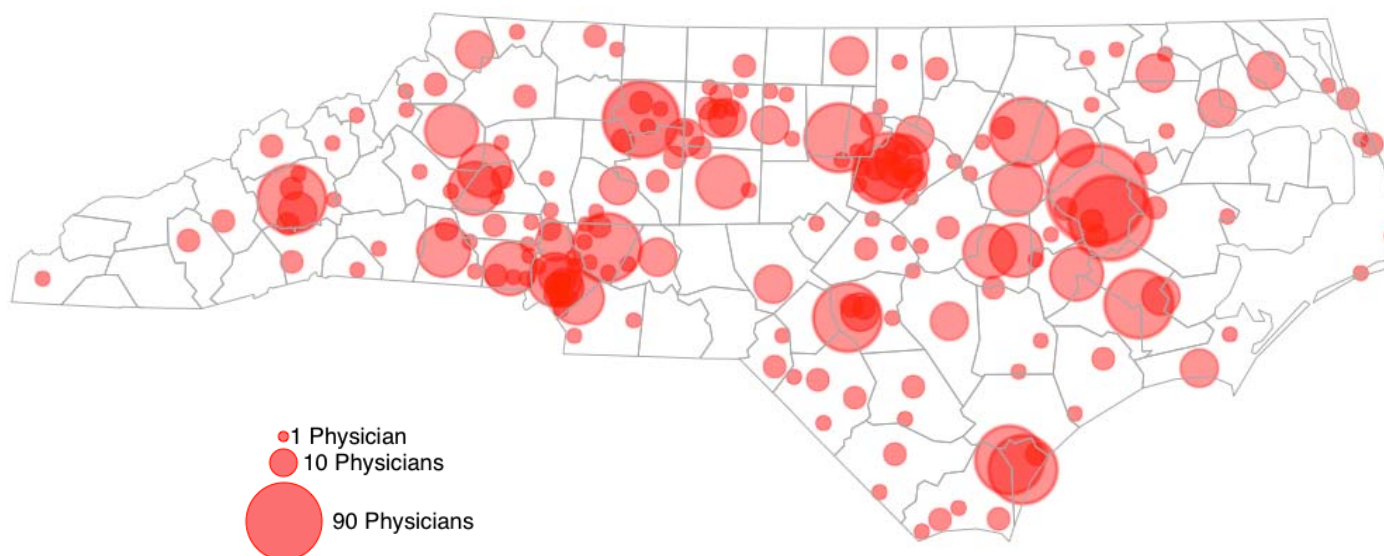
Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

Graduates of Brody School of Medicine at East Carolina University 2000



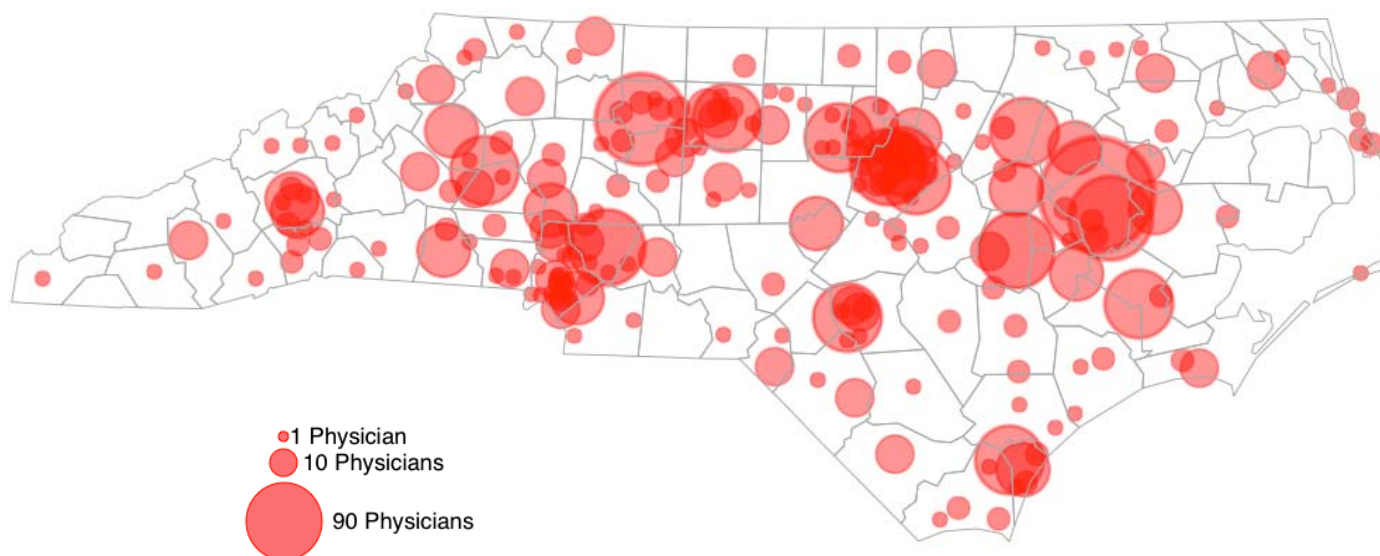
Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

Graduates of Brody School of Medicine at East Carolina University 2005



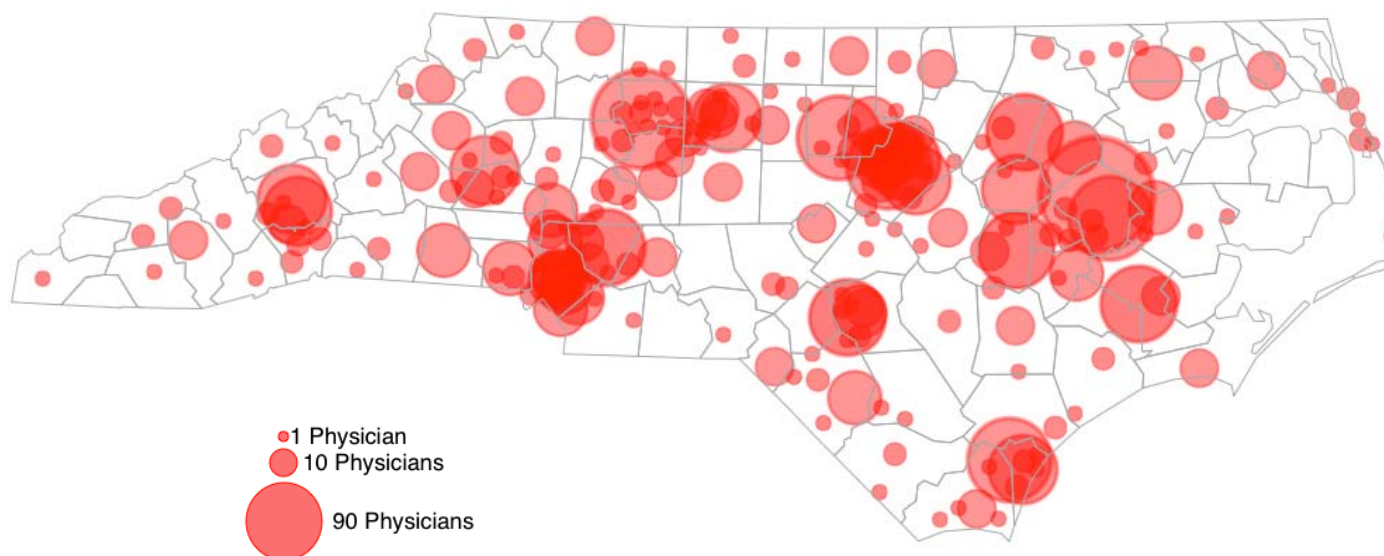
Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

Graduates of Brody School of Medicine at East Carolina University 2010



Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

Graduates of Brody School of Medicine at East Carolina University 2015

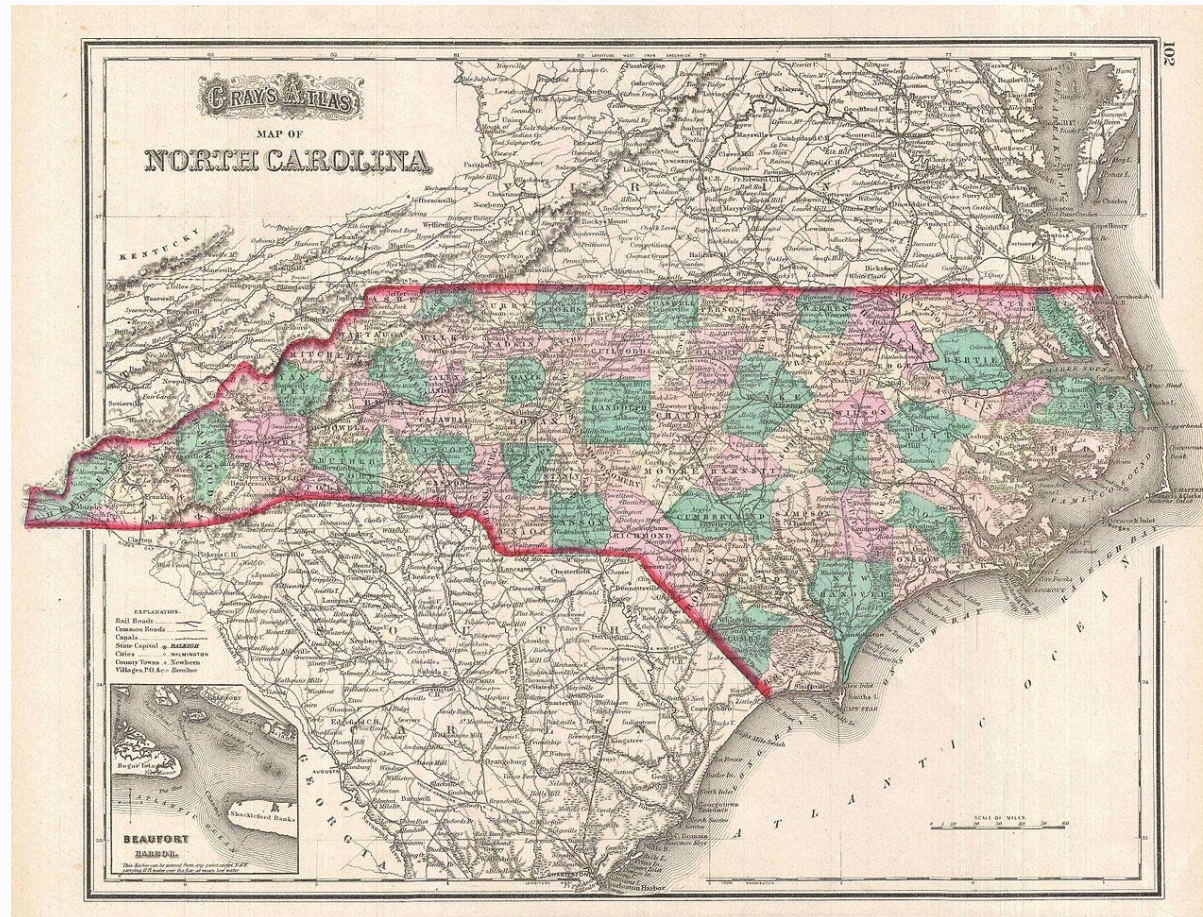


Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.

A Menu of Oral Health Workforce Policy Options



What workforce initiatives are underway in NC?



Education & Loan Repayment

- Education
 - Pre-college training (NC AHEC)
 - Admissions (rural backgrounds, diversity)
 - Learning opportunities in rural/underserved communities
- Loan Repayment
 - State and Federal Programs



Medicaid Dental Benefits in NC

- NC is one of 15 states where Medicaid offers adults “extensive” dental benefits¹

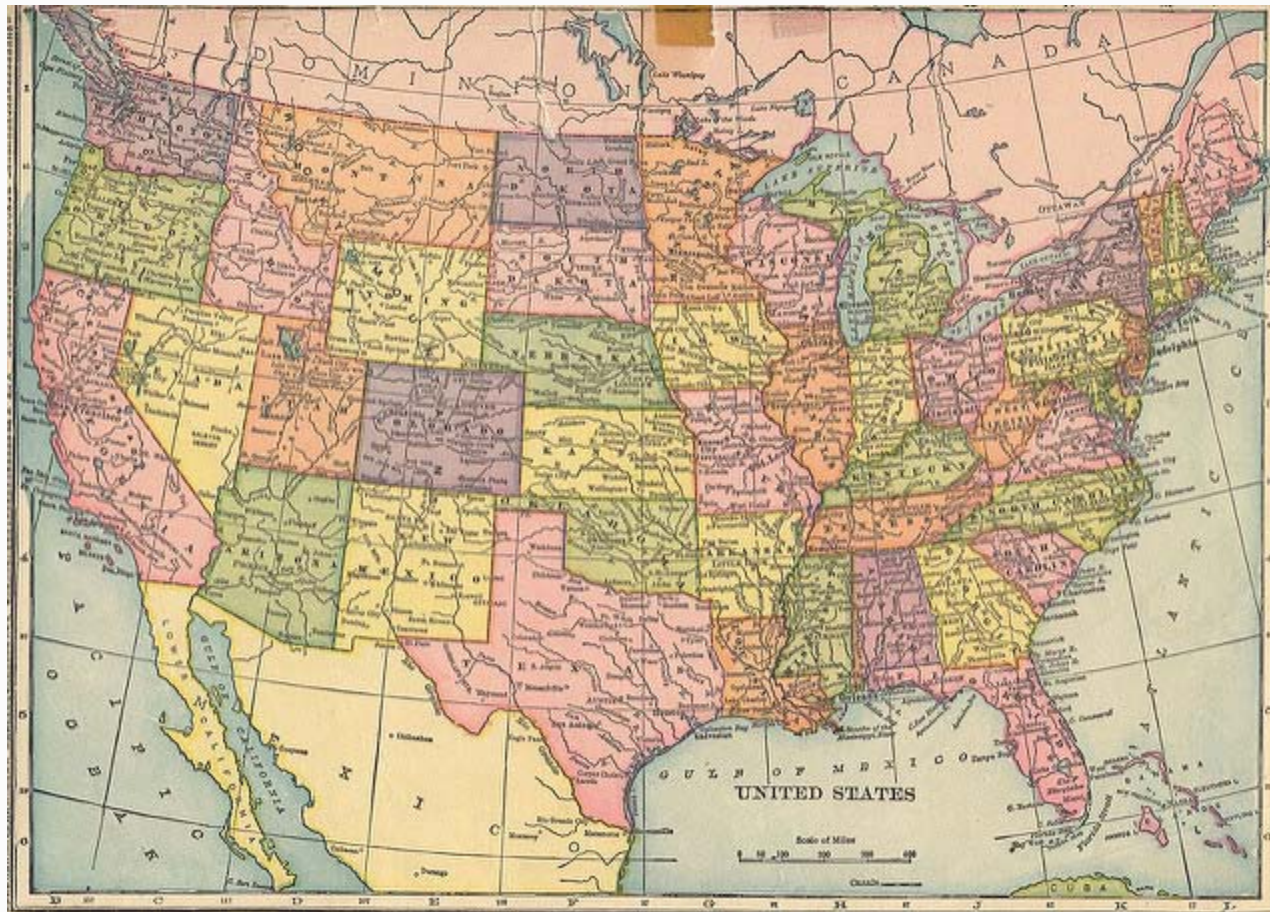
But...

- In 2012, fewer than 50% of NC’s dentists accepted Medicaid patients²
- Just a quarter were ‘significant providers,’ billing \$10,000 or more²

1. Chazin S. Dental Coverage and Access for Adults in Medicaid: Opportunities for States. Center for Healthcare Strategies, Inc. Powerpoint presented February 17, 2015. Accessed 16 Sept 2016 from: http://www.chcs.org/media/Dental-Coverage-and-Access-for-Adults-in-Medicaid_Opportunities-for-States_Final_4-20-2015_revised.pdf
2. Casey MW. The State of Medicaid and SHIP Dental Services in North Carolina. Powerpoint presented on December 14, 2012 at the Taskforce on Children’s Preventive Oral Health Services, NCIOM. Accessed 16 September 2016 from: http://www.nciom.org/wp-content/uploads/2012/11/OH_Casey_12-14-12.pdf



What are other states doing to build their oral health workforces?



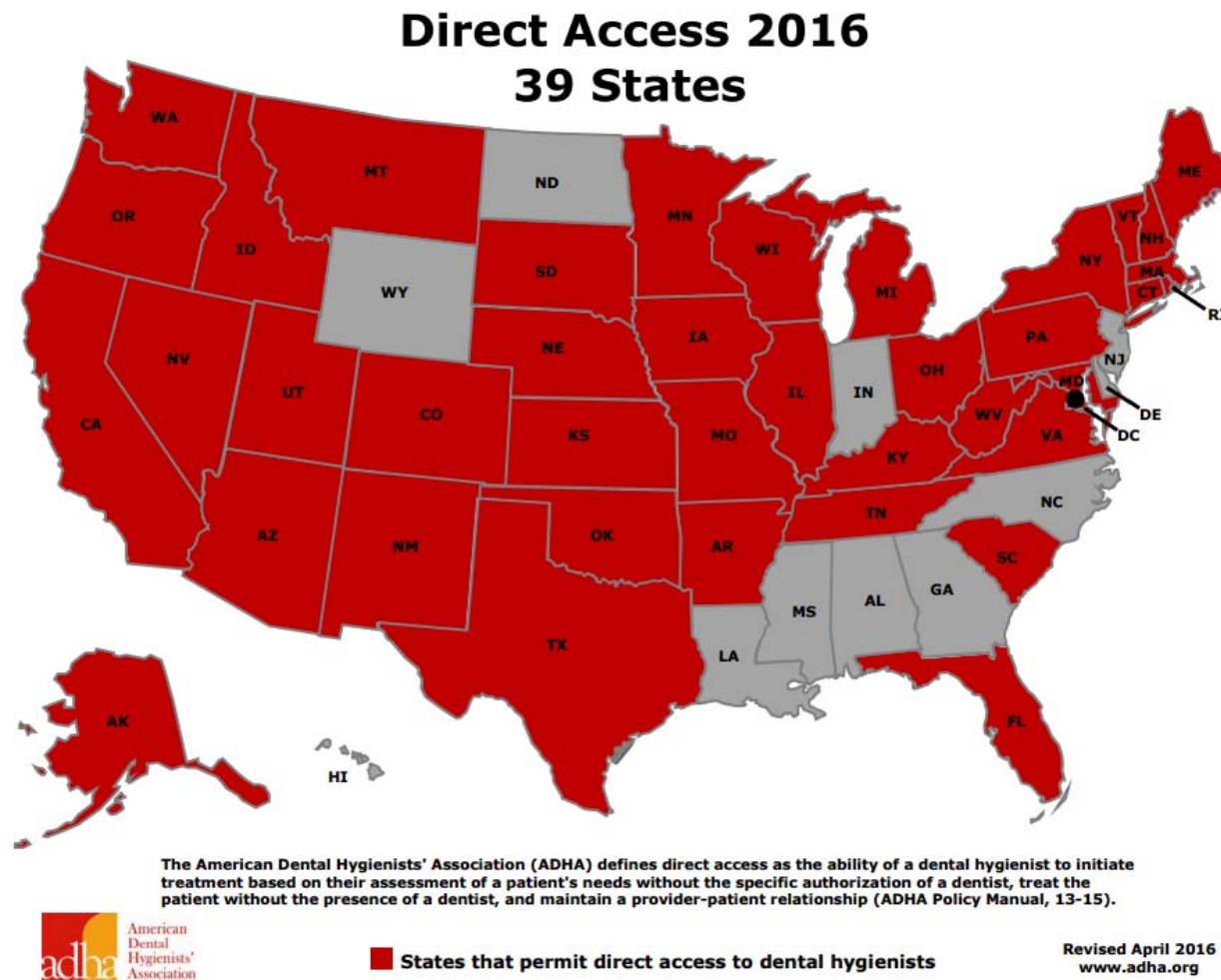
Dental Hygienists

- State laws vary regarding where hygienists can practice independently and what services they can provide
- “Direct access” hygienists assess and treat patients without specific authorization/ presence of a dentist on-site
- States where hygienists practice independently in public health settings have more FQHCs that deliver dental services¹

1. Maxey HL, Norwood CW, Liu Z. 2016. State policy environment and the dental safety net: a case study of processional practice environment' effect on dental service availability in Federally Qualified Health Centers. J Pub Health Dent. Epub.



States with “Direct Access” Dental Hygienists



Dental Therapists

- Provide preventive and restorative care
 - Oral exams, restorations, simple extractions, place crowns, etc.
 - Refer more complicated services to dentist
- Fewer than 100 practice in the United States
- See article for summary of dental therapist legislation in AK, ME, MN, VT:
 - Koppelman, J., Vitzthum, K., & Simon, L. 2016. Expanding Where Dental Therapists Can Practice Could Increase Americans' Access To Cost-Efficient Care. *Health Affairs*, 35(12), 2200-2206.



Integrating Oral Health Care into Primary Care

- Train primary care team & designate someone responsible for oral health
 - Physician, NP/PA, Nurse, LPN, Medical Assistant
 - Screen for oral health risk & examine mouth
 - Oral hygiene training and patient referral
 - Apply fluoride varnish
-
- In NC, “Into the Mouths of Babes” & Carolina Dental Home Program, both for kids



Questions?

Julie Spero

juliespero@unc.edu

Program on Health Workforce Research & Policy

<http://www.shepscenter.unc.edu/hp>

<http://www.healthworkforce.unc.edu>



UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH



UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH