

**Finding and Keeping Dentists for
North Carolina's Underserved Communities
Evidence Based Solutions for North Carolina**

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**Presentation to the NC Institute of Medicine
Health Professional Workforce Workgroup**

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9:00-12:00

Research and Policy Questions: Current Focus

- Individual provider questions
 - Who are the dentists who work in safety net settings? What factors predict dentists' willingness to work in safety net settings?
 - How often will dentists who have a service obligation to work in safety net settings, remain in such settings after they have completed their obligation?
 - How can we improve the chances that dentists will find rewarding careers in safety net settings?

Forthcoming article :

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Bhatavadekar NB^{1,2}, Rozier RG¹, Konrad TR³.
Holding up the Oral Health Safety Net:
The role of NHSC alumni dentists in North Carolina.
International Dental Journal, 2011, Jun, 61(3)

¹School of Public Health, UNC Chapel Hill

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³Cecil Sheps Center for Health Services Research, UNC Chapel Hill

Study Design

- In 2006, we identified all 20 NHSC LRP dentists who began a service obligation with the NHSC from 1990 through 1999: NHSC alumni.
- We identified a comparison entry cohort of 50 dentists who started practice in NC during the same time period:
 - Used historical licensure files
 - Only general, pediatric and public health
 - Checked against rosters of State LRP

Study Design

- The survey focused on dentists' practice during 2004--an early career phase, but beyond service obligation period for the NHSC alumni.
- Items profiled dentists' backgrounds, motivations, workload, job satisfaction, finances, and their patient populations
- Both groups had 68% response rate and were compared using difference of means tests and multivariate contingency tables.

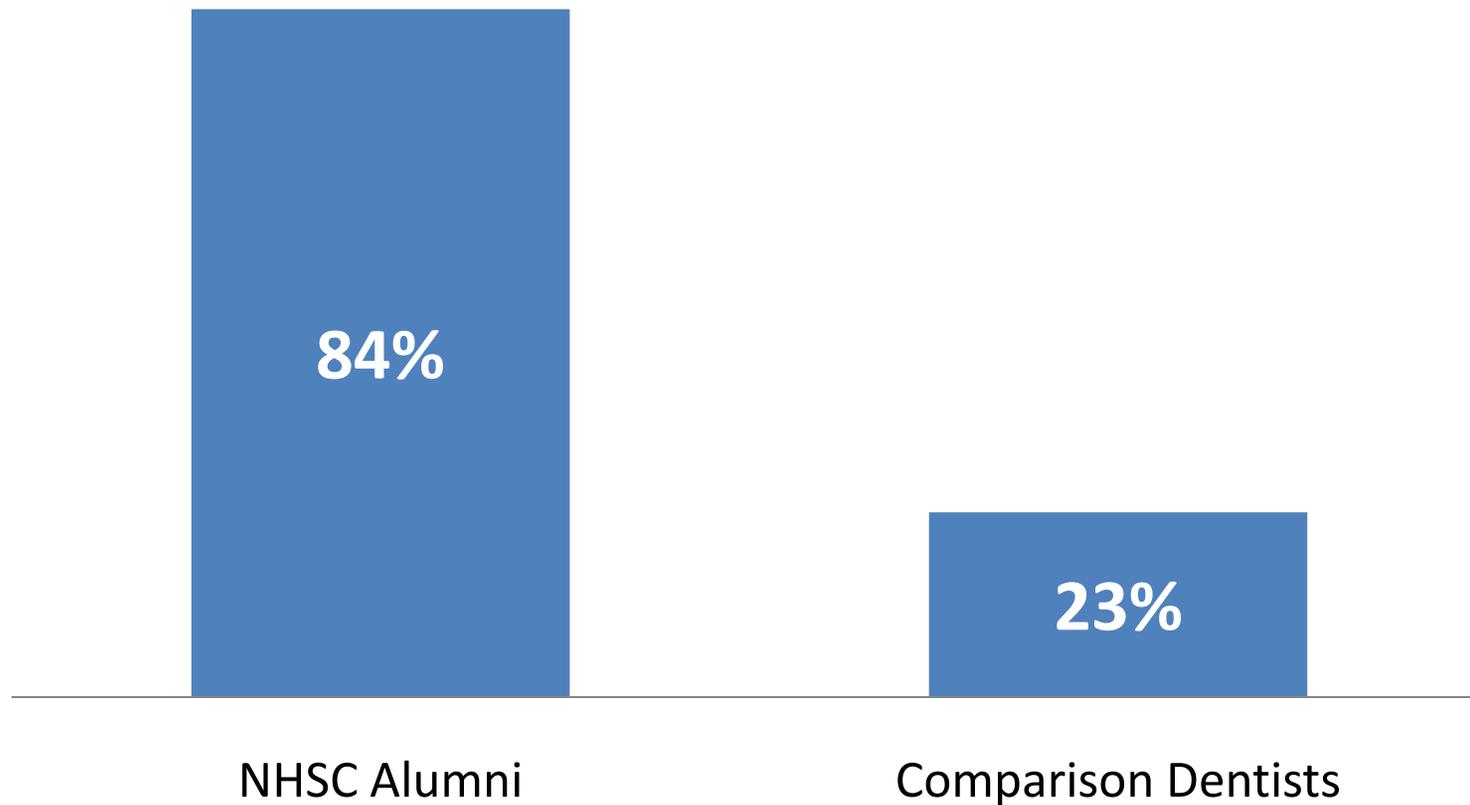
What is a Dental Safety Net Practice?

- A nonprofit or publicly owned practice: e.g., community clinic, rural health center, migrant health center, a health department, prison, etc.

OR

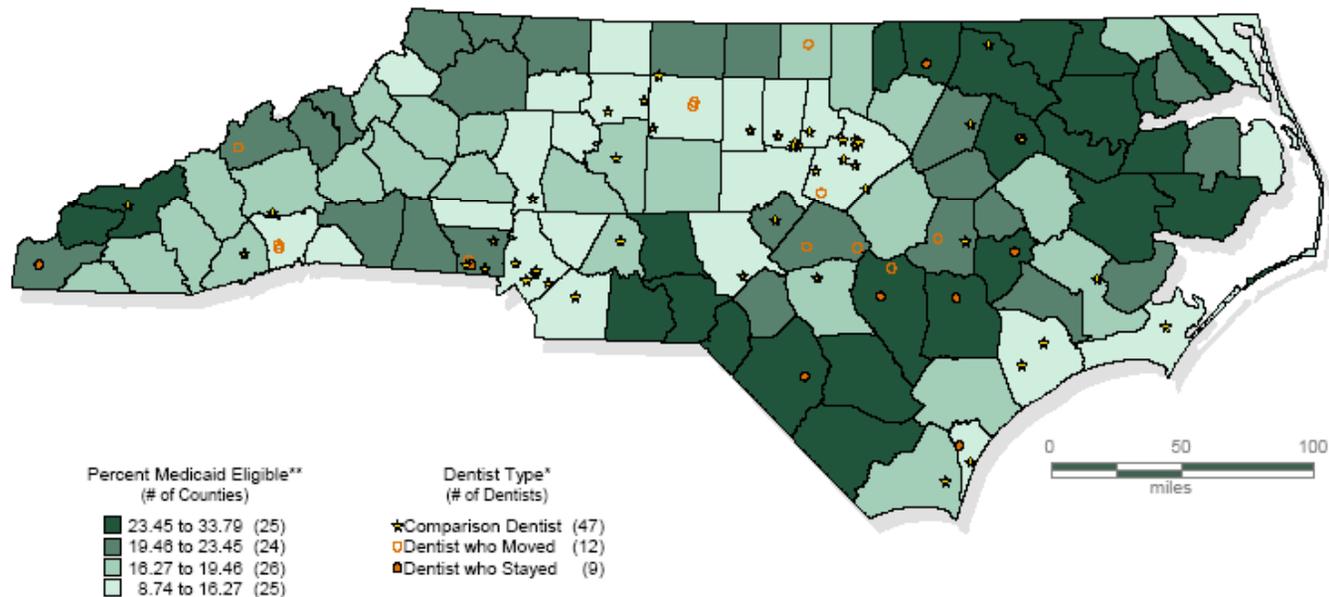
- A private dental practice that identifies 20% or more of its patients as Medicaid or S-CHIP beneficiaries.

Who was working in a safety net practice in 2004?



Where were our sample dentists located?

Recent National Health Service Corps Dental Alumni and Comparison Dentist Sites & Percent of Population Eligible for Medicaid North Carolina, 1990-2004



Produced By: Southeast Regional Center for Health Workforce Studies, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
Source: Area Resource File, 2003; National Health Service Corps, BHP, HRSA, DHHS, March 2004; NC Health Professions Data System, 2004; Division of Medical Assistance, NC DHHS, 2003.

*Comparison dentists include general practice and pediatric dentists practicing in 2004. NHSC service was completed between 1990 and 2003.
**This map does not indicate the number of dentists that accept Medicaid patients.

NHSC alumni vs. other young dentists

- Demographic and background
- Motivations for taking first job
- Debt, finances, starting, & current income
- Practice volume and workload
- Patient characteristics

Background: NHSC vs. Comparison Dentists

Social Characteristics	NHSC Alumni		Comparison Dentists		Diff of means test	
	Mean (N=12 or 13)	Std. Error	Mean (N=29-31)	Std. Error	F	Sig.
Female	42%	15%	45%	9%	0.04	0.841
Year graduated from dental school	1995	1.97	1994	0.89	0.05	0.818
Age at Graduation from dental school	29.54	1.00	29.03	0.61	0.2	0.660
<u>African American</u>	39%	14%	10%	6%	16.92	<0.001
<u>Spanish proficiency (1-3) self-rated</u>	1.85	0.27	0.73	0.14	4.25	0.046
<u>Raised in a suburban community</u>	17%	11%	52%	9%	23.28	<0.001
Raised in North Carolina	62%	14%	38%	9%	2.02	0.163
Raised in a rural community	42%	15%	26%	8%	2.57	0.117
<i><u>Raised in rural North Carolina</u></i>	31%	13%	16%	7%	3.98	0.052
<i><u>Raised in an urban community</u></i>	42%	15%	23%	8%	3.86	0.056

Reasons for taking 1st Job: NHSC vs. Comparison Dentists

w	NHSC Alumni		Comparison Dentists		Diff of means test	
	Mean (N=12 -13)	Std. Error	Mean (N=30=31)	Std. Error	F	Sig.
Importance of reason for taking job <i>(1: not important; 5= very important)</i> <i>I wanted to.....I</i>						
<u>Work in an underserved area</u>	4.67	0.14	2.32	0.25	19.01	<0.001
<u>Work to make a difference</u>	4.54	0.18	3.16	0.24	12.28	0.001
Pay off debt	4.23	0.36	3.39	0.26	3.27	0.078
<u>Serve patients “different from me”</u>	3.62	0.37	1.84	0.21	19.82	<0.001
<u>Be part of multidisciplinary team</u>	3.23	0.36	2.33	0.22	4.91	0.032
<u>Explore public health career</u>	3.08	0.43	2.03	0.23	5.25	0.027
Get experience, then work in private practice	2.92	0.43	2.77	0.31	0.08	0.779
<u>Work in long-term job setting</u>	<u>2.67</u>	<u>0.40</u>	<u>3.57</u>	<u>0.28</u>	<u>3.15</u>	<u>0.083</u>
Prepare for academic dentistry	1.77	0.32	1.65	0.20	0.11	0.741
Wait for specialty training opportunity	1.62	0.29	1.71	0.23	0.06	0.815

Financial status: NHSC and Comparison Dentists

	NHSC Alumni		Comparison Dentists		Diff of means test	
Financial Indicator	Mean (N=10-13)	Std. Error	Mean (N=20-31)	Std. Error	F	Sig.
\$50,000+ in debt after dental school.	77%	12%	62%	9%	4.52	0.04
Debt level after dental school	\$84,769	\$12,577	\$67,103	\$8,465	0.01	0.94
Starting annual compensation 1st practice	\$60,692	\$5,243	\$45,188	\$4,517	0.57	0.46
Compensation final yr of last practice	\$84,583	\$8,507	\$121,500	\$12,508	4.72	0.04
Started in Pub Hlth /community practice	58%	12%	13%	6%	19.2	<0.001
Full or part owner of practice in 2004	58%	12%	68%	9%	1.49	0.23
Ann comp increase: 1 st yr to 2004.	\$9,158	\$2,790	\$12,429	\$3,357	0.44	0.51
Years in Practice	9.3	2.0	9.7	0.9	0.05	0.81
Net dental income in 2004	\$121,167	\$10,646	\$165,690	\$24,907	6.57	0.02
Total dollar value of charitable care 2004	\$57,773	\$28,603	\$45,328	\$18,557	0.24	0.63

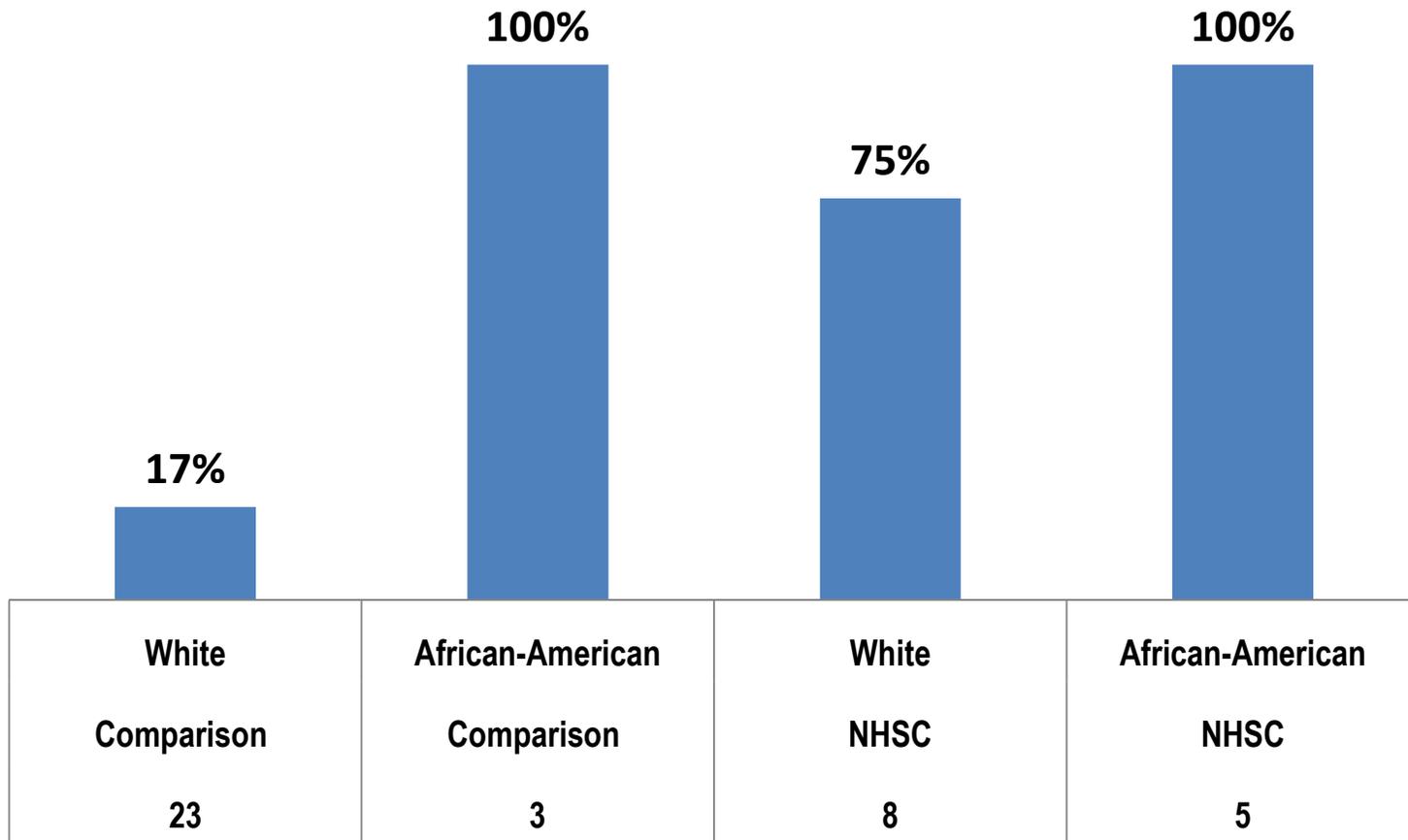
Practice characteristics: NHSC and Comparison Dentists

Practice Characteristics	NHSC Alumni		Comparison Dentists		Diff of means test	
	Mean (N=10-13)	Std. Error	Mean (N=2031)	Std. Error	F	Sig.
Total weeks worked in last year	43.9	4.8	45.1	1.5	0.99	0.755
Average Weekly Hours worked	40.2	3.2	37.7	1.6	0.62	0.435
Average weekly patient care hours	32.6	1.6	32.8	1.0	0.01	0.922
Weekly patient visits treated by dentist	49.5	3.9	46.5	4.1	0.19	0.67
<u>Unscheduled visits per week</u>	13.4	4.3	5.6	0.6	7.15	0.011
<u>Average appointment length (minutes)</u>	40.8	3.7	53.2	2.9	6.04	0.018
<u>Average days to initial appointment</u>	31.8	8.6	9.5	1.4	15.18	<0.001
<u>Average days to recall appointment</u>	41.9	9.5	15.4	4.2	8.91	0.005
Summary Job Satisfaction Measure	44.6	5.9	46.2	8.3	0.31	0.579

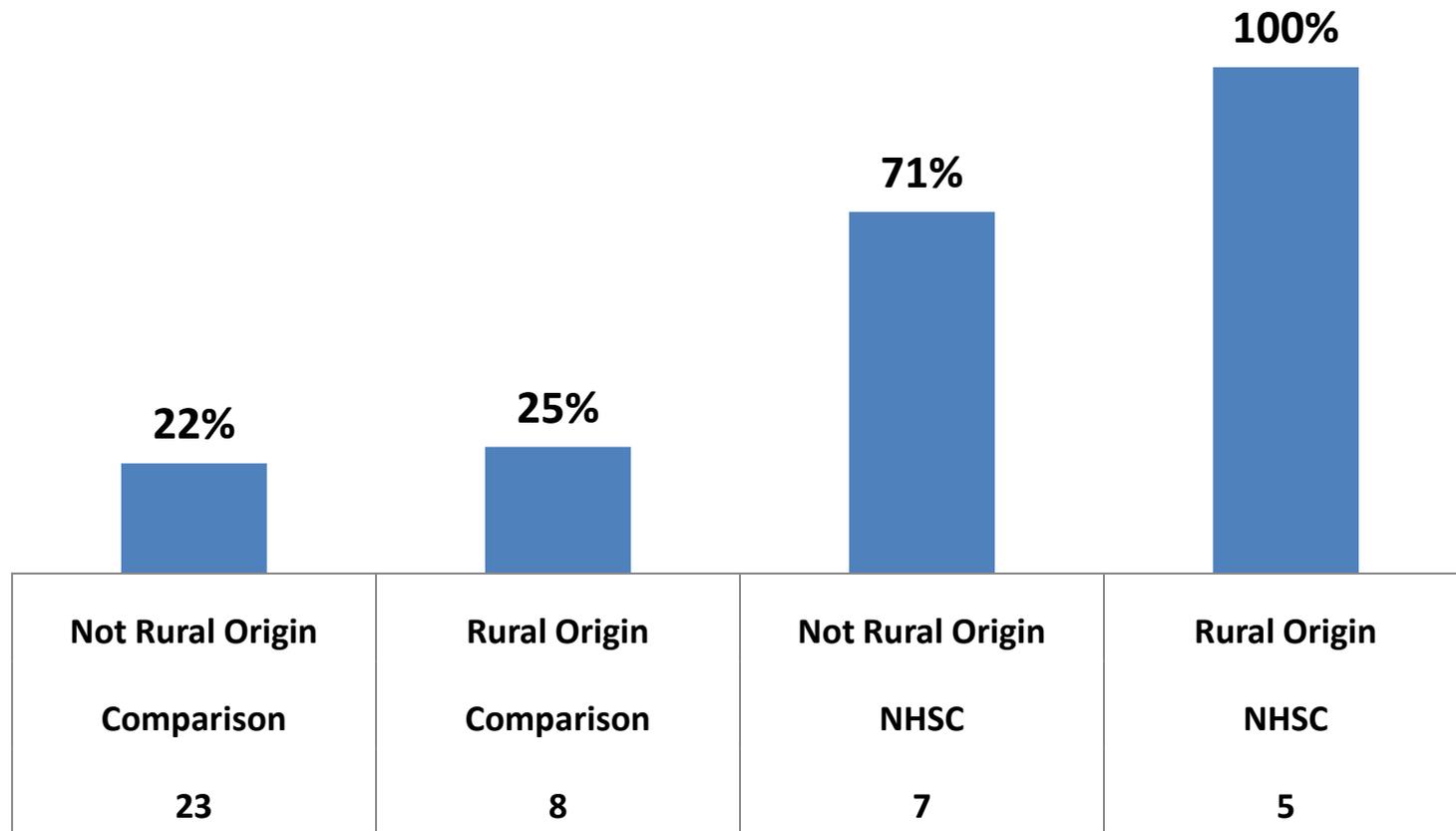
Patient characteristics: NHSC and Comparison Dentists

Patient Characteristics	NHSC Alumni		Comparison Dentists		Diff of means test	
	Mean (N=10-19)	Std. Error	Mean (N=20-31)	Std. Error	F	Sig.
<u>Percent pts w/ Medicaid or S-CHIP</u>	60%	7%	19%	6%	19.85	<0.001
<u>Percent of patients with private insurance</u>	23%	8%	55%	5%	11.93	<0.001
Percent of pts not covered by any insurance	24%	6%	26%	4%	0.10	0.756
<u>Percent of patients aged <=4 yrs</u>	13%	3%	6%	1%	5.94	0.019
<u>Percent of patients aged 5-14 yrs</u>	32%	5%	19%	3%	6.40	0.018
<u>Percent of patients aged 0-14 yrs</u>	45%	6%	25%	3%	10.01	0.003
Percent of patients 65+ yrs old	11%	2%	14%	2%	0.08	0.773
Percent of patients who are female	57%	2%	52%	3%	2.85	0.099
Percent of patients who are African-American	35%	5%	26%	3%	0.02	0.901
<u>Percent of patients: Hispanic/Latino</u>	22%	6%	9%	3%	5.18	0.028

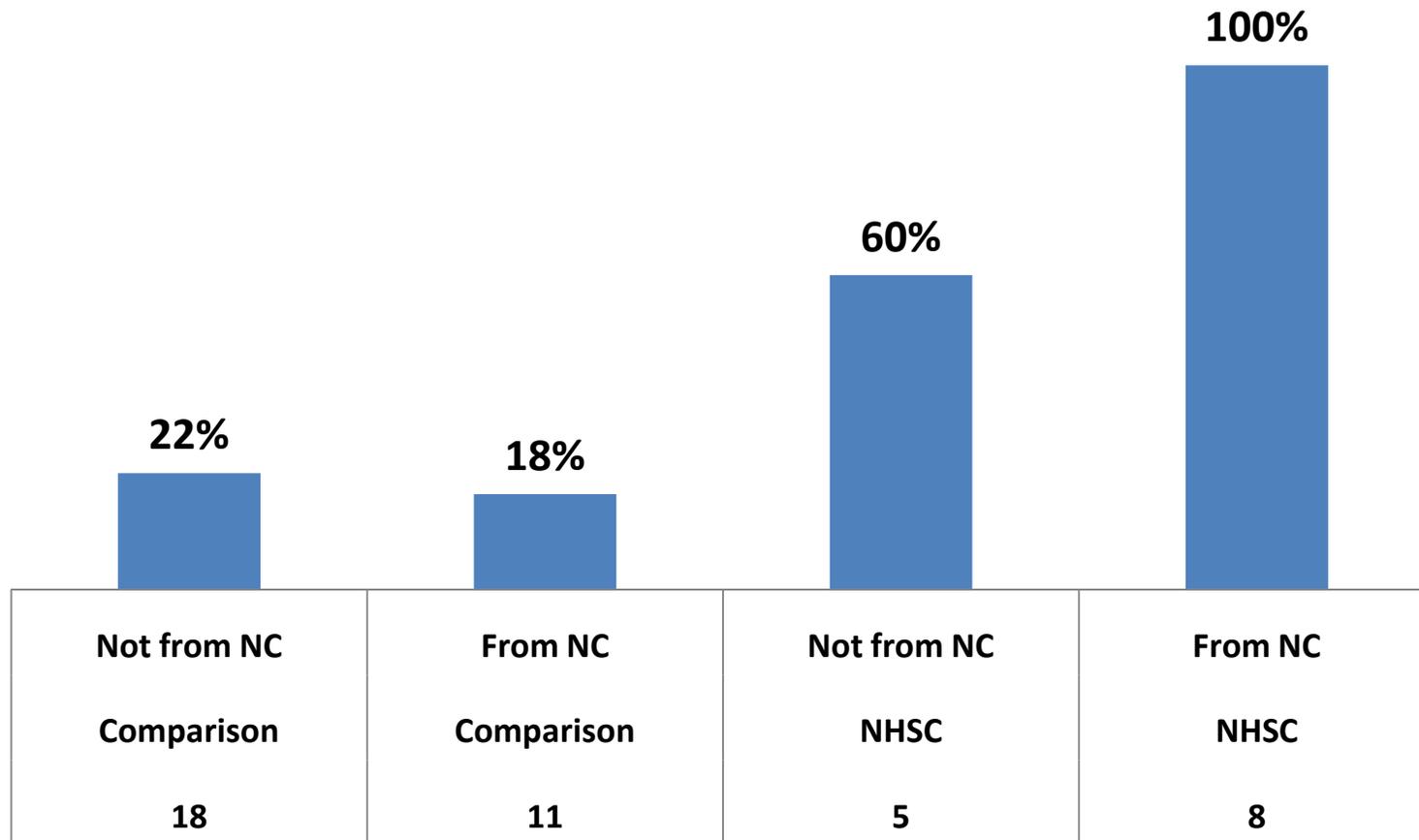
Who works in Safety Net Practice? African-American Dentists?



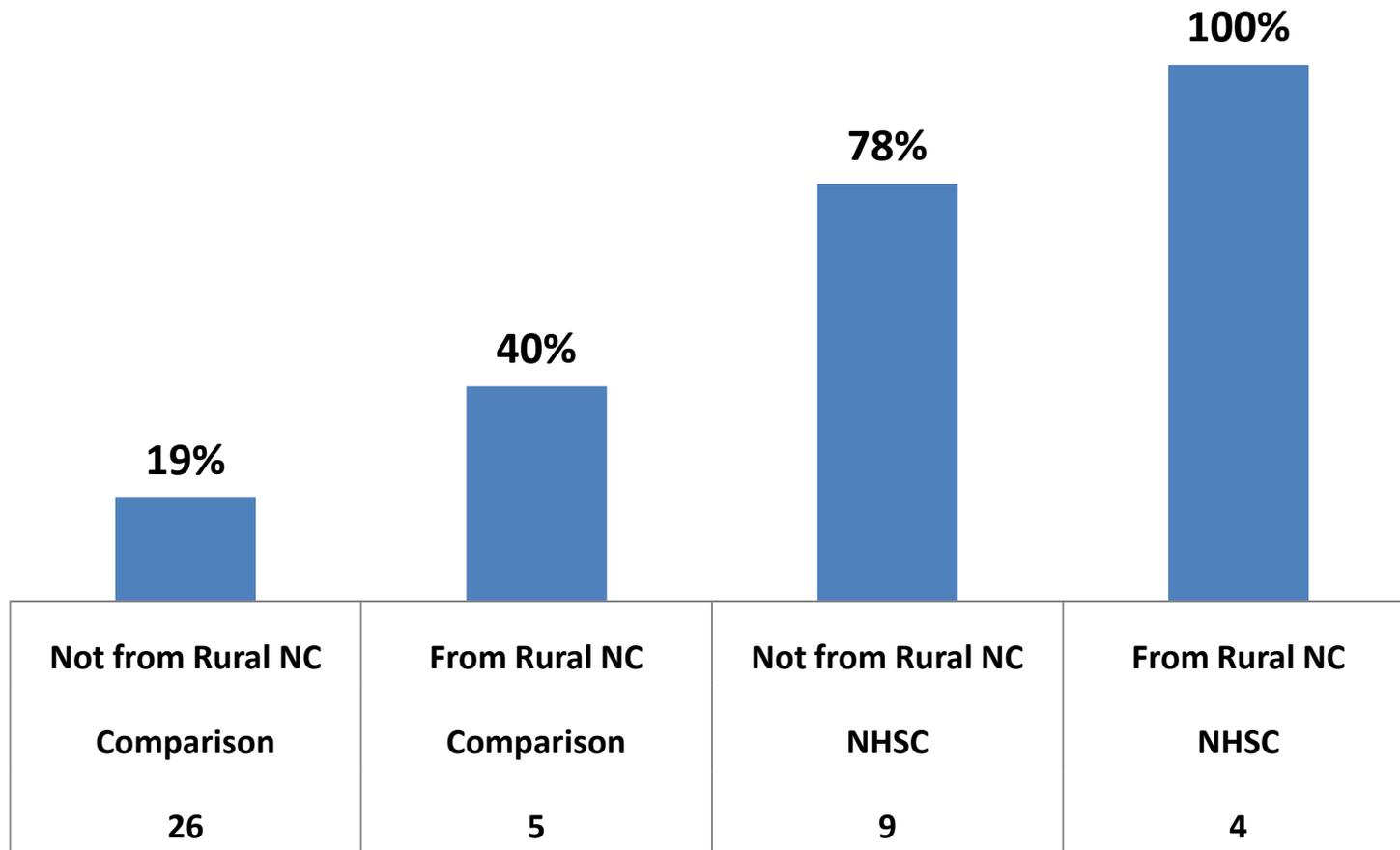
Who works in Safety Net Practice? Dentists from rural origins?



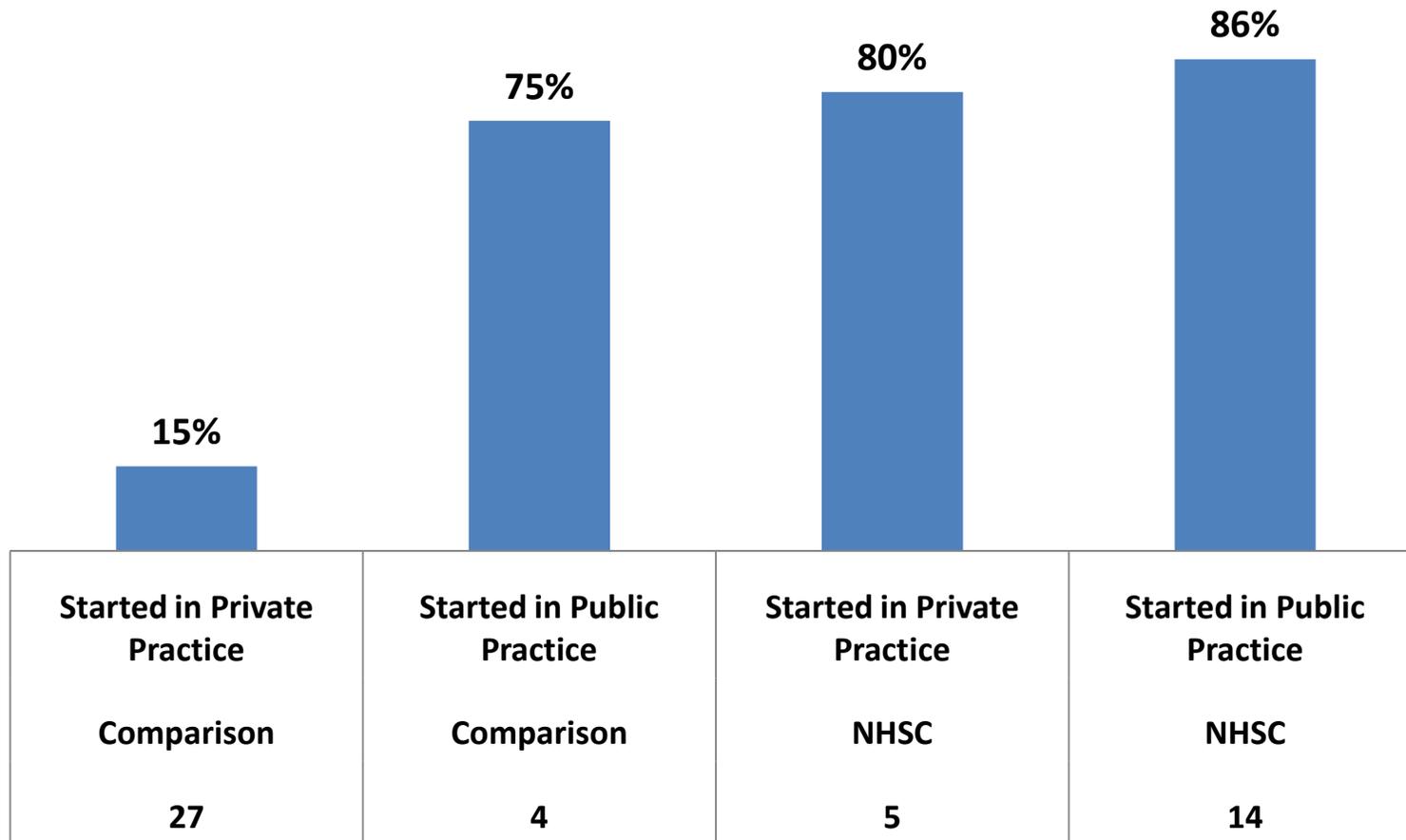
Who works in Safety Net Practice? Dentists with Tar Heel Origins?



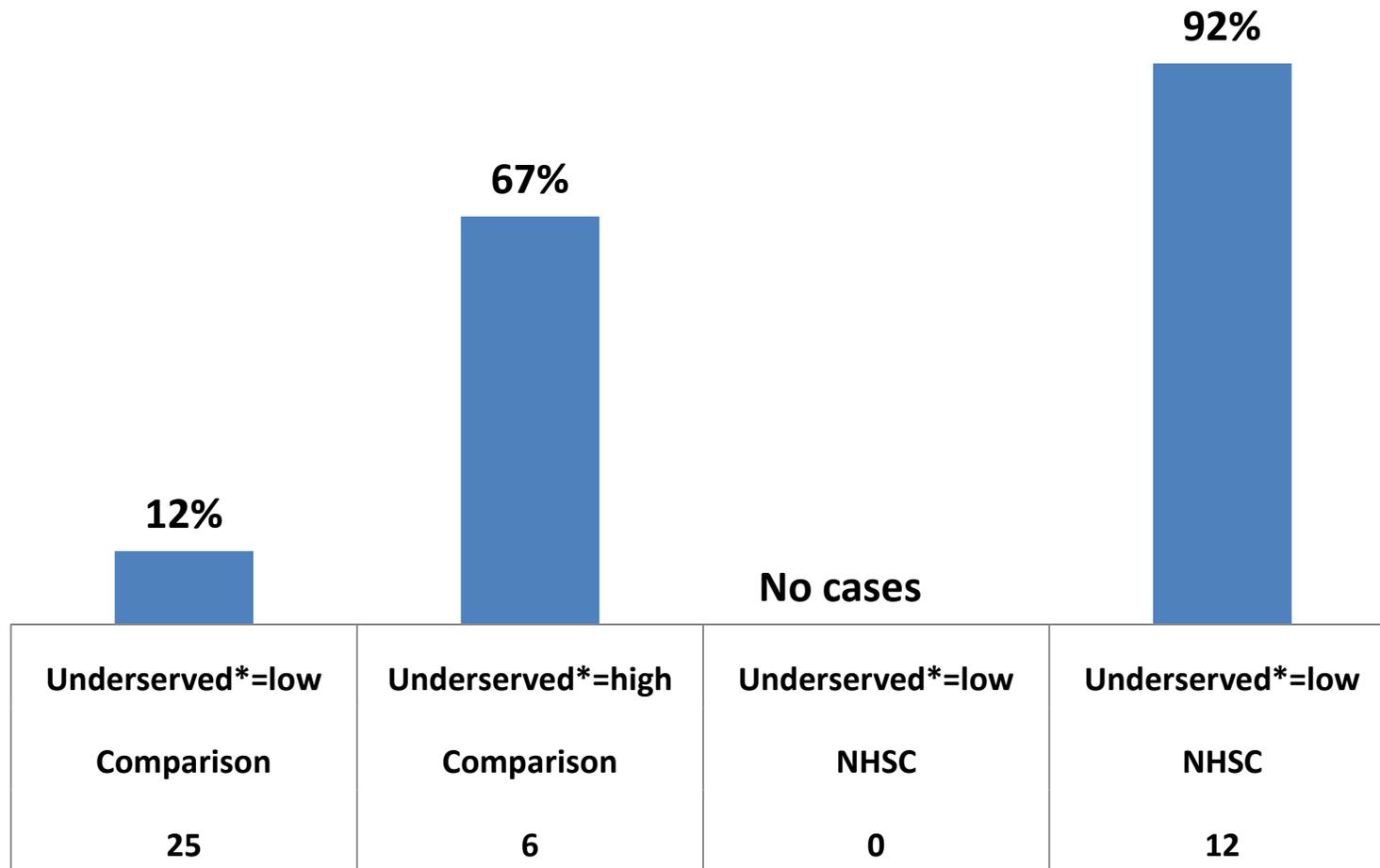
Who works in Safety Net Practice? Dentists from Rural NC?



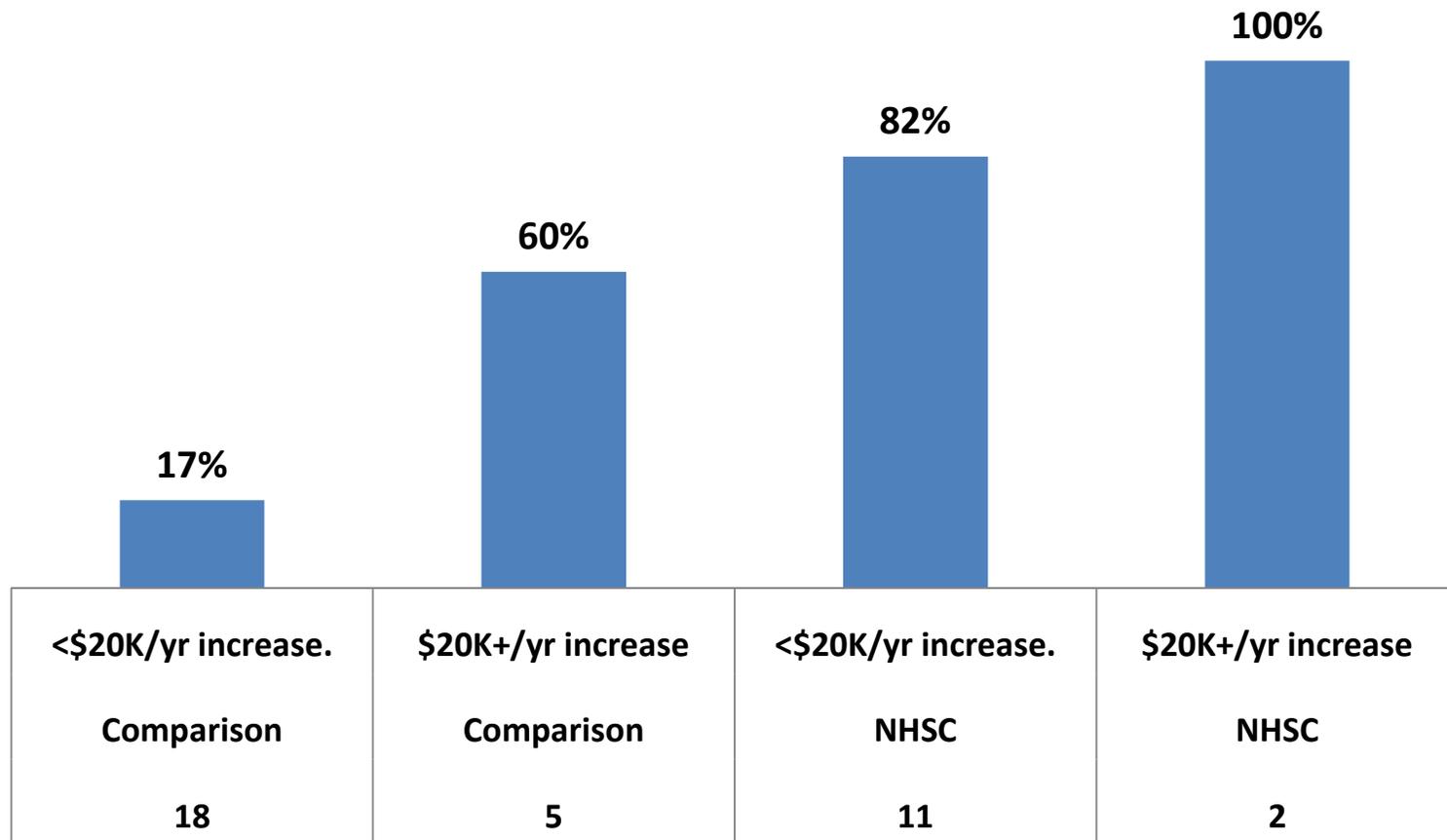
Who works in Safety Net Practice? Few who start in private practice



Who works in Safety Net Practice? Altruistic Dentists



Who works in Safety Net Practice? Dentists who get raises.



Who works in Safety Net Practice?

Multivariate results

Factor	Level or value	Predicted increase (+) in Pct Medicaid in 2004	Predicted probability of being in a “safety net practice” in 2004.
Race	African-American	+40% to 45%	--*
NHSC Status	Served in the NHSC	+25% to 35%	Strong
Interest in Underserved	“Important/ Very Important” in Job Choice	--*	Strong
Average Ann Income Increment	For each \$10,000	+5% to 10%	Moderate

**Relationship could not be tested in multivariate analysis due to confounding.*

Other likely candidates factors (nearly statistically significant in our analyses):
Social Origins in Rural North Carolina.

Limitations and Opportunities

- The use of the “safety net” practice as a dependent variable has its limitations. The whole population of a rural county without a dentist is “underserved.”
- The small numbers in this study make it difficult to draw firm conclusions, but findings are consistent with other studies of physicians and national studies of NHSC dentists.
- Two HRSA sponsored UNC-CH/Sheps studies *now underway* will generate data on dentists in the NHSC (SP and LRP) as well as those in other state Loan repayment programs.

Recent Statistics from NC Dental Loan Repayment Programs

North Carolina State Sponsored Loan Repayment for Oral Health Professionals in North Carolina, 2006-2010						
Year	Dentists			Dental Hygienists		
	Field Strength	New Contracts	Applicants	Field Strength	New Contracts	Applicants
2006	31	21	21	1	1	1
2007	37	26	26	2	2	2
2008	50	34	34	5	3	3
2009	51	22	22	6	3	3

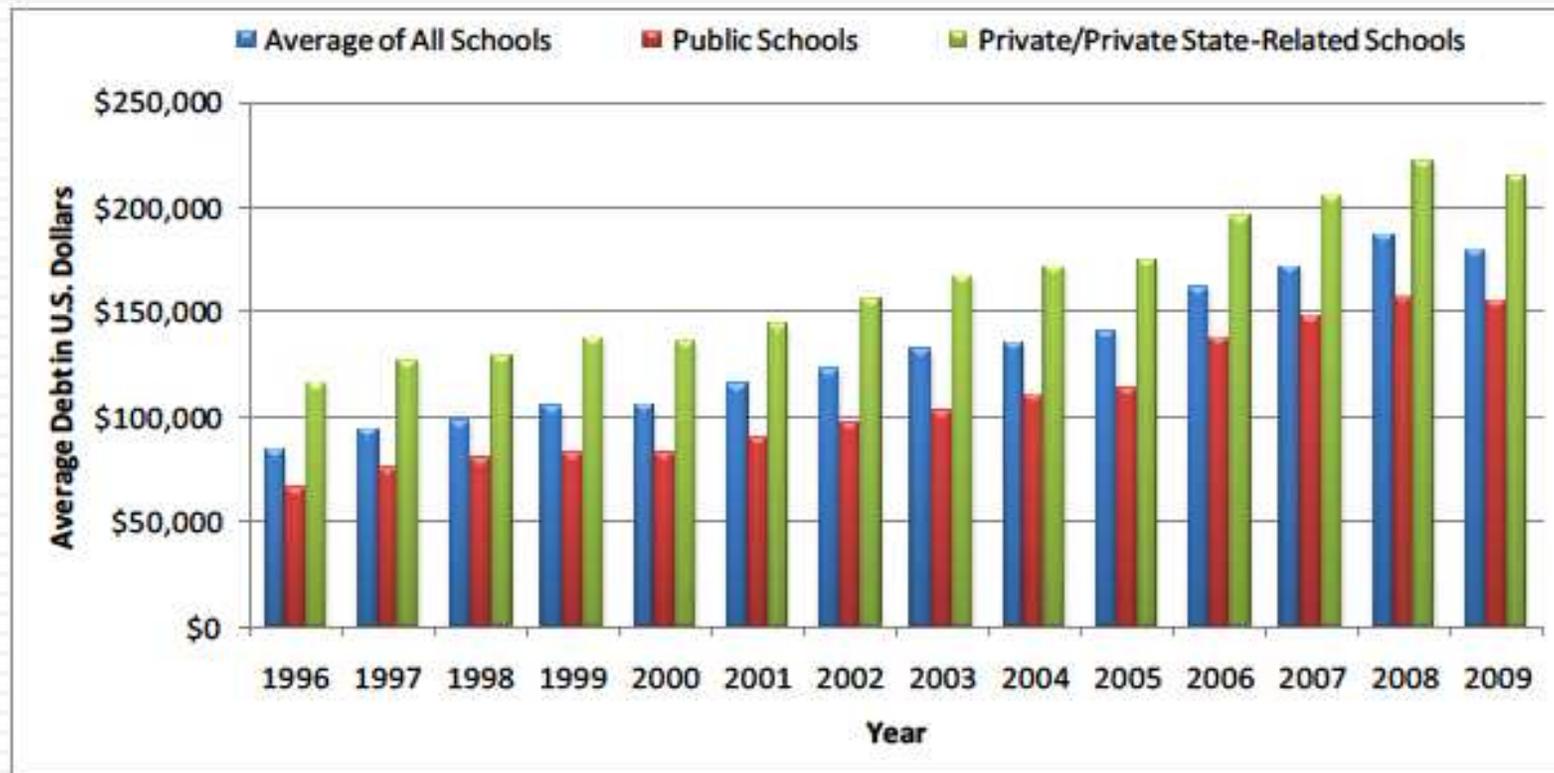
Policy Recommendations

- Dental schools should recruit students demonstrating high levels of altruistic motivation and those coming from traditionally disadvantaged backgrounds.
 - may increase workforce supply for underserved populations, and
 - may amplify the effectiveness of financial incentives of NHSC and state-based loan repayment programs.
- Policymakers and educators should coordinate their efforts to create synergies.
 - appropriate selection of students should be followed by adequate support for them during their didactic and clinical educations and on into their early careers.

Average Debt Among Graduating Students with Debt by Type of School, 1996 - 2009



American Dental Education Association

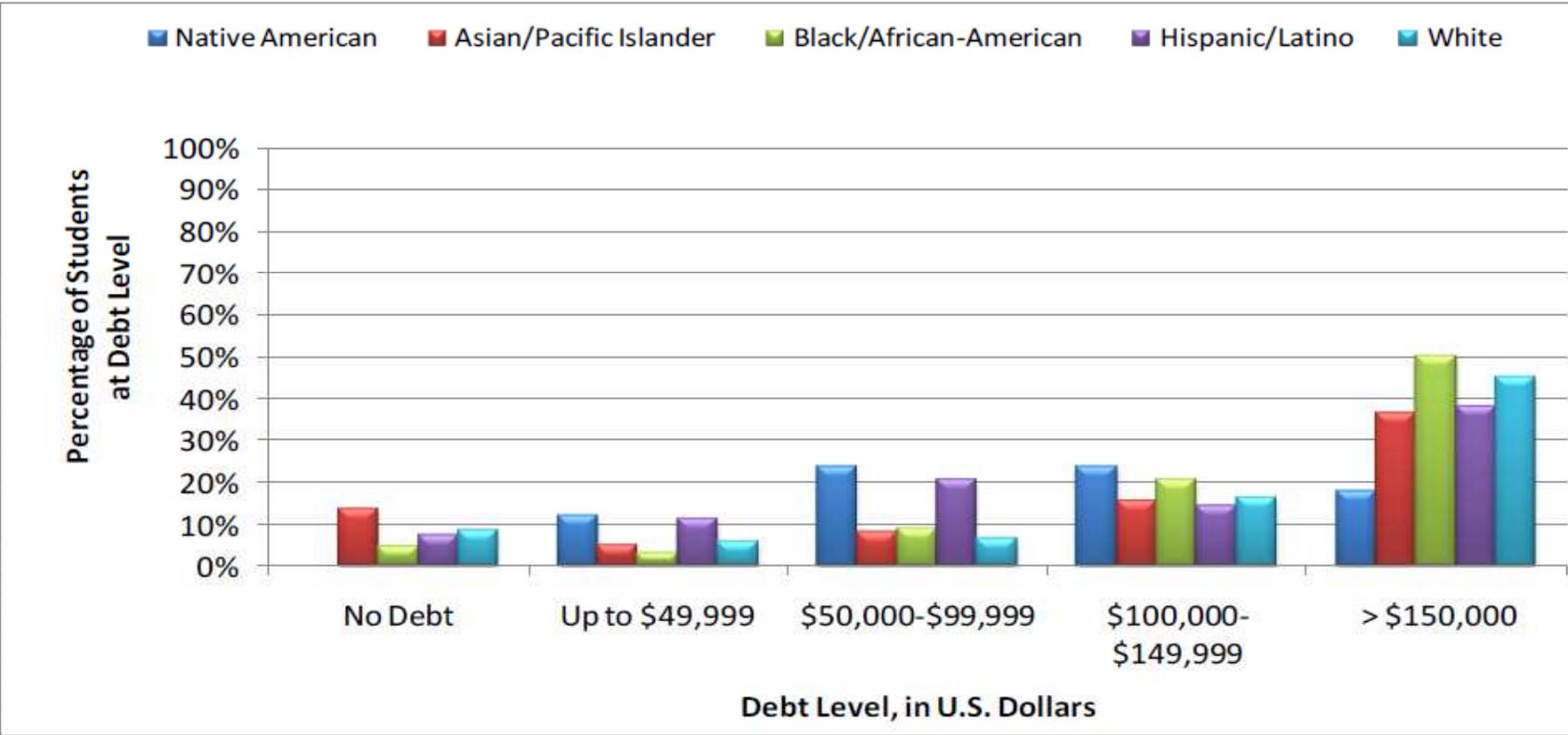


Source: American Dental Education Association, 2009 Senior Survey

Percentage of Students at Different Levels of Graduating Debt by Race/Ethnicity, 2009



American Dental Education Association

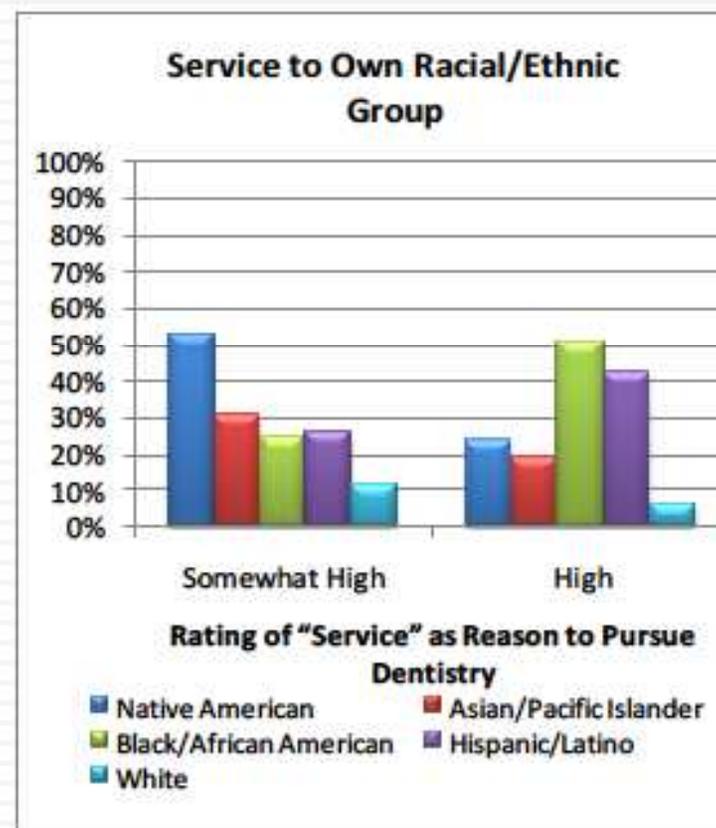
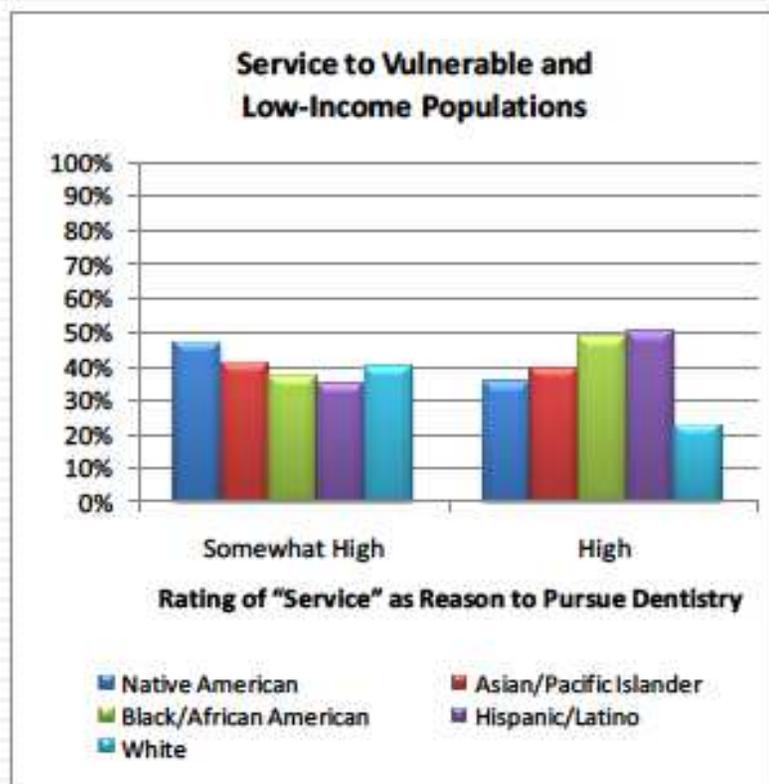


Source: American Dental Education Association, 2009 Senior Survey

Rating of "Service" to Certain Demographics of the Population as Reason to Pursue Dentistry, 2009



American Dental Education Association



Source: American Dental Education Association; 2009 Senior Survey

Research and Policy Questions: Also important

- Structural, system, and program questions:
 - Has increased receptivity to dentists trained outside NC increased dental care access for the underserved?
 - Is North Carolina optimally using resources available through state and Federal loan and scholarship programs? ARRA funds? Dental HPSAs? Eligible sites?
 - What will be the impact of the new dental school on “dedicated” dental provider supply?
 - Should we be considering dental extenders?

Framing the types of solutions.

- *Normative:*
 - Express appreciation, and provide symbolic rewards and recognition for altruism and community service of dentists. It always helps to say thanks.
- *Utilitarian:*
 - Provide flexible loan repayment service options followed by adequate compensation (e. g., strategically targeted retention bonuses) in the post-service period enabling a career path for dentists employed in safety net settings.
- *Coercive:*
 - Mandate minimum Medicaid/S-CHIP caseloads or universal periodic participation in safety net clinical activities to distribute the underserved caseload more equitably across the dental workforce.

Questions?