

The North Carolina Health Professions Data System:

Collecting Workforce Data Through Licensure

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*Alabama Comprehensive Health Workforce Data Repository Work Group
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What's the plan?

- The Minimum Data Set
- Benefits of collecting and analyzing data (a.k.a. “Why should we do this?”)
- The NC Health Professions Data System
 - Who we are and what we do
 - Professions we track
 - Using data to inform policy: examples
 - Staffing, Resources
 - Budgets
- Resources available to you:
The Health Workforce Technical Assistance Center

The Minimum Data Set

- Guidelines developed by HRSA and other experts to collect *basic, minimum, consistent, comparable* data on supply and distribution of health professionals
- One goal: collect comparable data across health professionals, location and time
- Can be implemented in multiple ways
 - National organizations (e.g., NCSBN)
 - States (surveys, licensure)
 - Individual health professionals (e.g., NSSRN)

More at <http://bhpr.hrsa.gov/healthworkforce/data/minimumdataset/index.html>



Why do state-based workforce planning?

- States' role in ACA implementation – what are the implications for workforce?
- States vary from the national picture; there's local/regional variation
- Many policy levers are state-level (e.g., scope of practice)
- Decisions about whether to enact or change policies directed at training, recruiting, and retaining health professionals affect wide range of stakeholders, and are source of contentious debate



What's your state asking?

- Will we have enough of X professionals in the right specialties, employment settings and locations to meet future demand?
- Do we need a new school of X, Y, Z?
- What's the distribution of CNMs, Ob/Gyns and FPs delivering babies?
- Where are potential dental practice opportunities/needs?
- What is the current breakdown of ADN vs BSN nurses?



**But how do we know,
you might ask?**

North Carolina as a case study



The 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
- Independence brings rigor and objectivity



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

- 35 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

*One exception, specific for tracking primary care providers: § 93B-12, “Information from licensing boards having authority over health care providers.”
http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_93B/GS_93B-12.html



Health professions included in the NC HPDS

- Physicians (MDs and DOs)
- Physician Assistants
- Dentists
- Dental Hygienists
- Optometrists
- Pharmacists
- Physical Therapists
- Physical Therapist Assistants
- Respiratory Therapists (2004)
- Registered Nurses
- Nurse Practitioners
- Certified Nurse Midwives (1985)
- Licensed Practical Nurses
- Chiropractors
- Podiatrists
- Psychologists
- Psychological Associates
- Occupational Therapists (2006)
- Occupational Therapy Assistants (2006)

Note: We have published data since 1979 for all professions unless otherwise noted in parentheses.

What basic data elements are collected?

Data elements that *usually* don't change

- Name
- Date and place of birth
- Race/ethnicity
- Gender
- Basic professional degree
(degree conferred, name and location of institution attended)
- Unique identifier

Which data elements are updated annually?

Data elements that ***may*** change and are updated annually:

- Employment address
- Home address
- Type of position
- Employment setting
- Clinical practice area
- Activity status (*retired, active practice, not employed in profession*)
- Average hours per week/employment status
- Highest degree
- Foreign language ability (*for select professions*)



Annual North Carolina Health Professions Data Book

- Produced since 1979
- Details state and county level health professions data
- Used by policymakers, educators, researchers, the media and health professionals as the official source of health professions statistics in NC

State Total						
Number of Counties in Region: 100						
■ 2013 ACTIVE HEALTH PROFESSIONALS*■						
Physicians		Nurses				
Non-Federal Physicians	22,414	Registered Nurses	99,611			
Primary Care Physicians	8,477	Nurse Practitioners	4,696			
Family Practice	2,148	Certified Nurse Midwives	262			
General Practice	135	Licensed Practical Nurses	18,119			
Internal Medicine	2,056	Other Health Professionals				
Obstetrics/Gynecology	1,556	Chiropractors	1,617			
Pediatrics	754	Occupational Therapists	2,892			
Other Primary Care	1,828	Occupational Therapy Assistants	1,379			
Other Specialties	13,937	Optometrists	1,127			
Physicians per 10,000 Population	22.7	Pharmacists	10,026			
Primary Care Physicians per 10,000 Population	8.6	Physical Therapists	5,403			
Federal Physicians**	788	Physical Therapist Assistants	2,525			
Dentists and Dental Hygienists		Physician Assistants	4,606			
Dentists	4,483	Podiatrists	285			
Dental Hygienists	5,666	Practicing Psychologists	2,134			
■ DEMOGRAPHICS ■		Psychological Associates	889			
Projected Population 2013		Respiratory Therapists	3,970			
	Total	Ages 0-19	Ages 20-64	Ages 65+	Employment and Income Data	
White	7,069,419	1,703,942	4,223,401	1,142,076	Labor Force 2013	4,694,939
Nonwhite	2,792,533	871,358	1,660,930	260,245	Employed 2013	4,318,319
Total	9,861,952	2,575,300	5,884,331	1,402,321	Unemployed 2013	376,620
% of Pop.	100.0%	26.1%	59.7%	14.2%	Unemployment Rate 2013 (%)	8.0
					Per Capita Income 2013	\$38,683
					Medicaid Eligibles 2013	1,745,170
■ HEALTH-RELATED STATISTICS ■						
Vital Statistics 2013						
<i>(Rates are per 1,000 population)</i>						
Resident Births	118,983	Total Pregnancies	139,582	Total Pregnancy Rate	70.0	
Resident Deaths	83,317	Teen Pregnancies	11,178	Teen Pregnancy Rate	34.5	
% Births <2500 gms (2013)	8.8	<i>(ages 15-19)</i>		<i>(ages 15-19)</i>		
Infant Mortality Rates 2013						
<i>(Rates are per 1,000 population)</i>						
Total	8.7	White	7.8	Nonwhite	9.8	
Hospital/Facility Data						
General Hospital Discharges 2013	960,929	General Hospital Beds 2013	22,749	Nursing Facility Beds 2013	45,519	

§ Please refer to page 4 of this book for an explanation of the change in reporting primary care physicians.

* Numbers reported include those active within the profession and those newly licensed in 2013 with unknown activity status; inactive are excluded

** Includes NC licensed federal physicians in the armed services, US Public Health Service, Indian Health Service, and the Department of Veteran Affairs.

— Counts are for discharges of county residents from acute-care, short-stay hospitals; numbers exclude normal newborns.

→ Counts of hospital beds in acute care short stay hospitals in county.

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Who uses data & for what purposes?

Government

Policy Decisions
Allocate funding
Program planning
Evaluation
HPSA analysis
Grant proposals

Workforce Policy

Evaluation
Program planning
Policy analysis
Regulatory questions
Grant proposals
Pipeline and diversity

Education, Research

Planning for new schools
Planning for new programs
Pipeline and diversity
Evaluation
Research projects
Grant proposals

Funders

Program planning
Allocate funding
Evaluation

National Organizations

National policy
Evaluation
Dissemination
Improve data quality

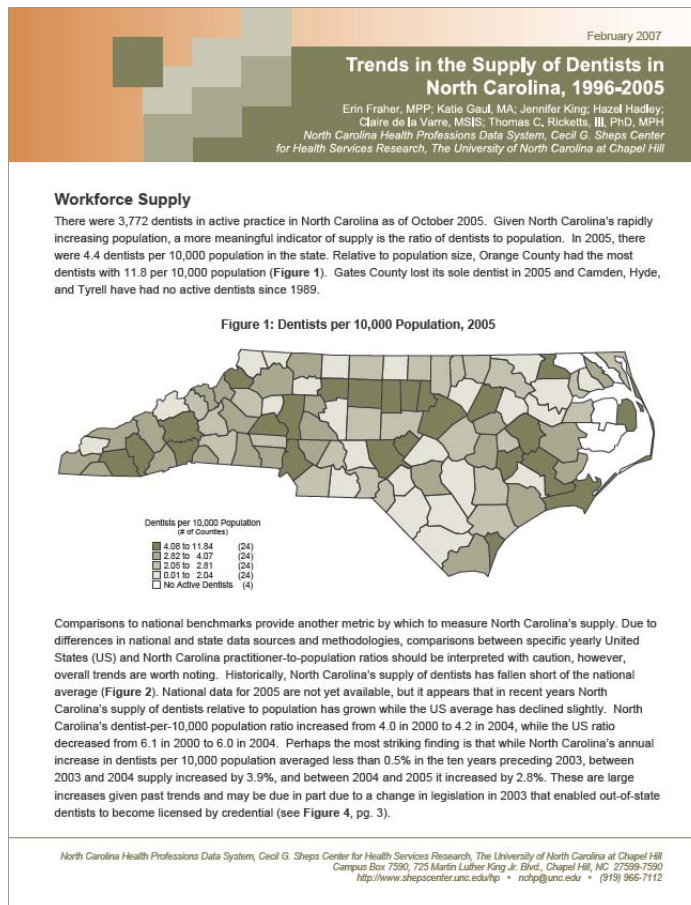
Professional Associations

Advocacy, Membership
Policy analysis
Program planning
Grant proposals

Other

News stories; class projects; locational analysis; loan repayment; court cases; advertise seminars

Trends in the Supply of Dentists in North Carolina, 1996-2005



Policy Issue: Dental access in North Carolina

Key Findings:

- NC lags behind national supply
- Between 1996-2005, 33% of counties experienced decline in dentists per 10,000 pop; 26 of 33 were rural counties
- Aging dental workforce, especially in *rural* counties
- 87% of dentists are white

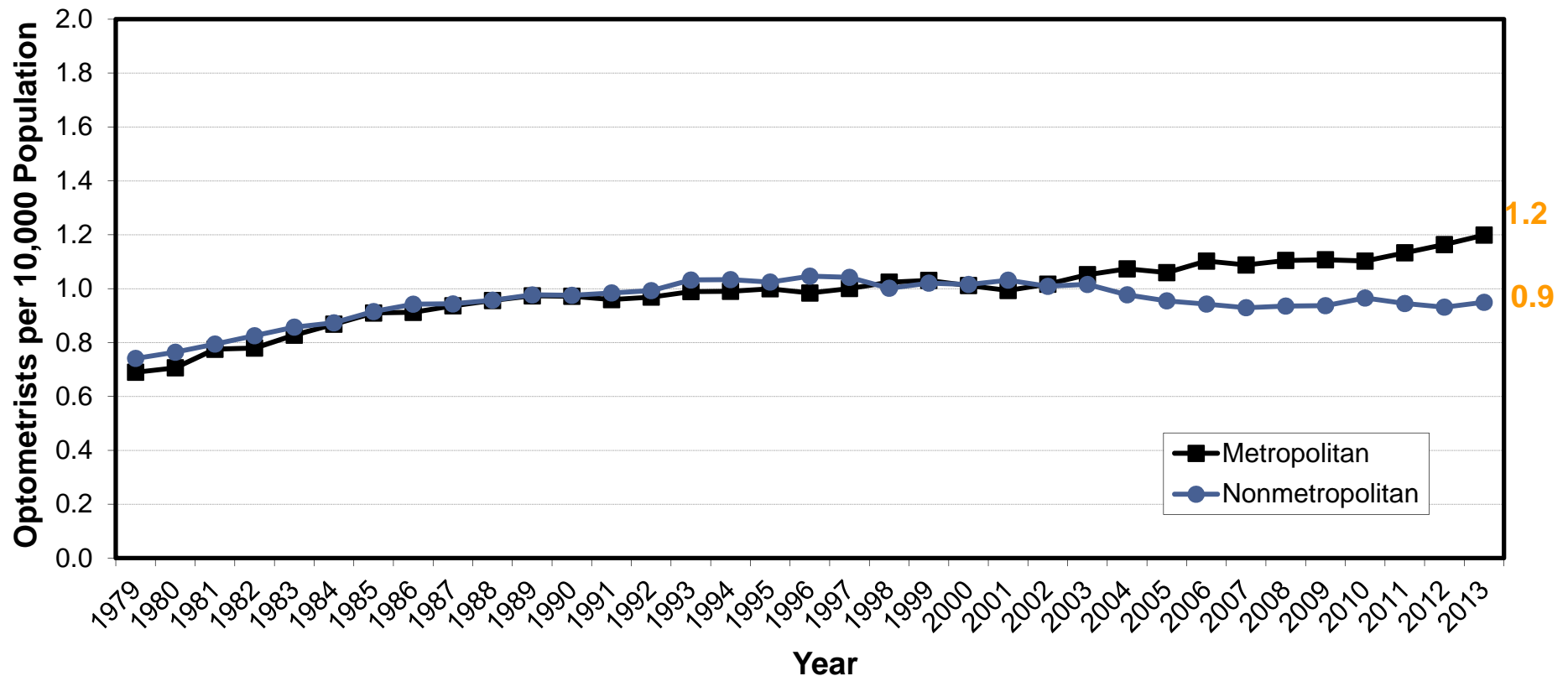
Policy Response:

- Legislature appropriated \$89.6 million for new dental school at ECU and \$96 million for expansion at UNC-CH

February 2007, updated data in Fall 2008

Optometrist supply and distribution fairly stable; No recommendation to open new school in NC

Optometrists per 10,000 Population by Metropolitan and Nonmetropolitan Counties, North Carolina, 1979 to 2013



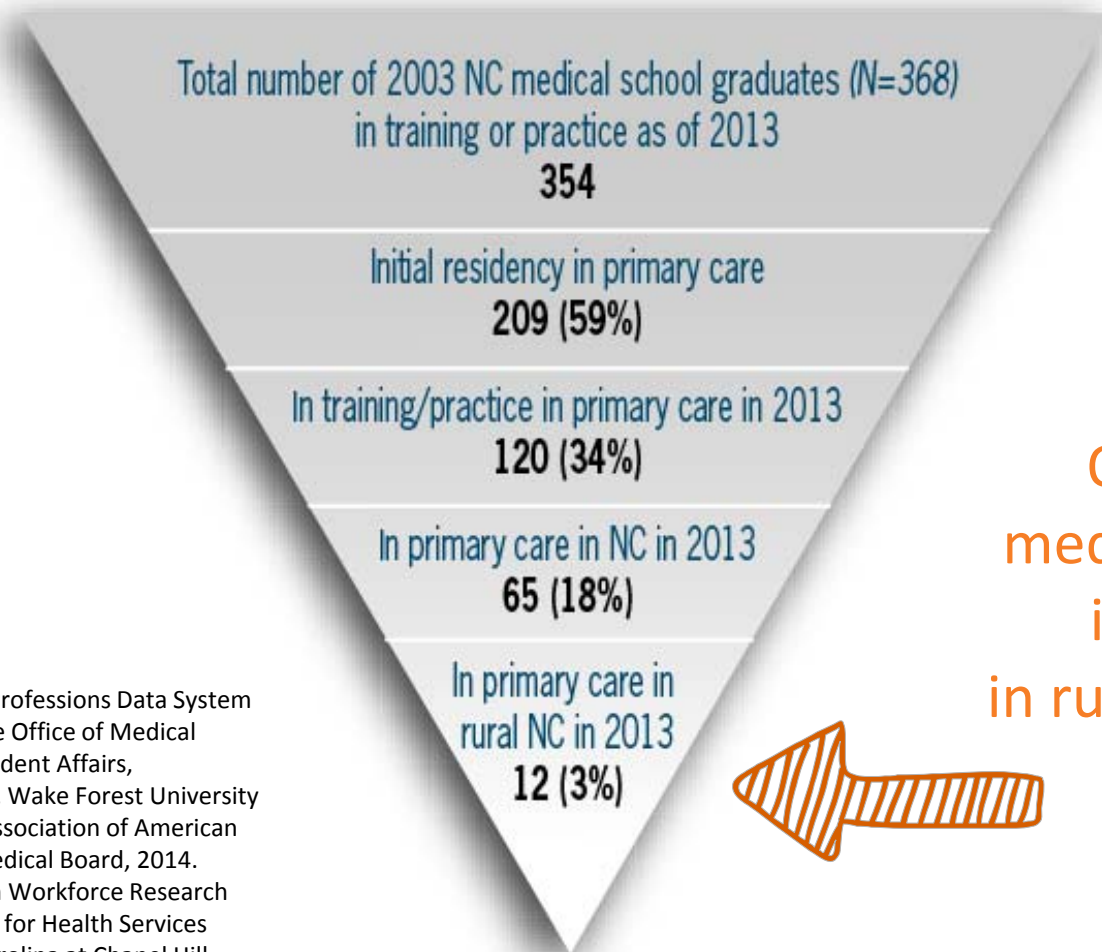
Figures include all licensed, active, instate optometrists.

Sources: North Carolina Health Professions Data System, 1979 to 2013; North Carolina Office of State Planning; US Census Bureau & Office of Management and Budget, 2013. North Carolina population data are smoothed figures based on 1980, 1990, 2000 and 2010 Censuses.

Medical student tracking

- 1993: NC legislature expressed concern over 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 UNC Board of Governors track progress and report regularly to General Assembly

North Carolina medical graduates: retention in rural primary care in NC ten years after graduation

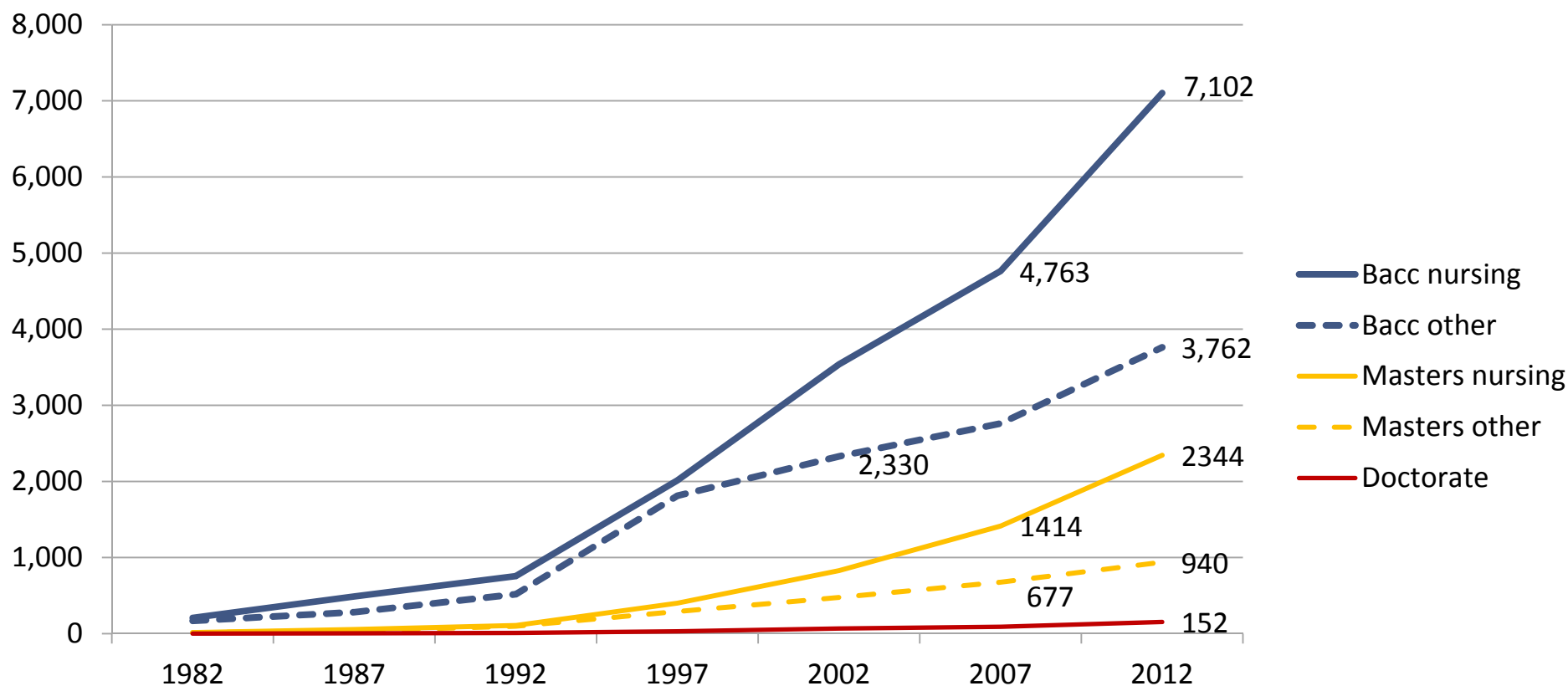


Only 3% of NC's med grads practice in primary care in rural NC counties 10 years after Graduation!!

Sources: North Carolina Health Professions Data System with data derived from the 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, 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.

Number of nurses with ADN as entry degree and baccalaureate+ as highest degree has increased dramatically

Number of North Carolina Nurses Entering with ADN as Entry Degree Who Have Baccalaureate or Higher Degree, 1982-2012

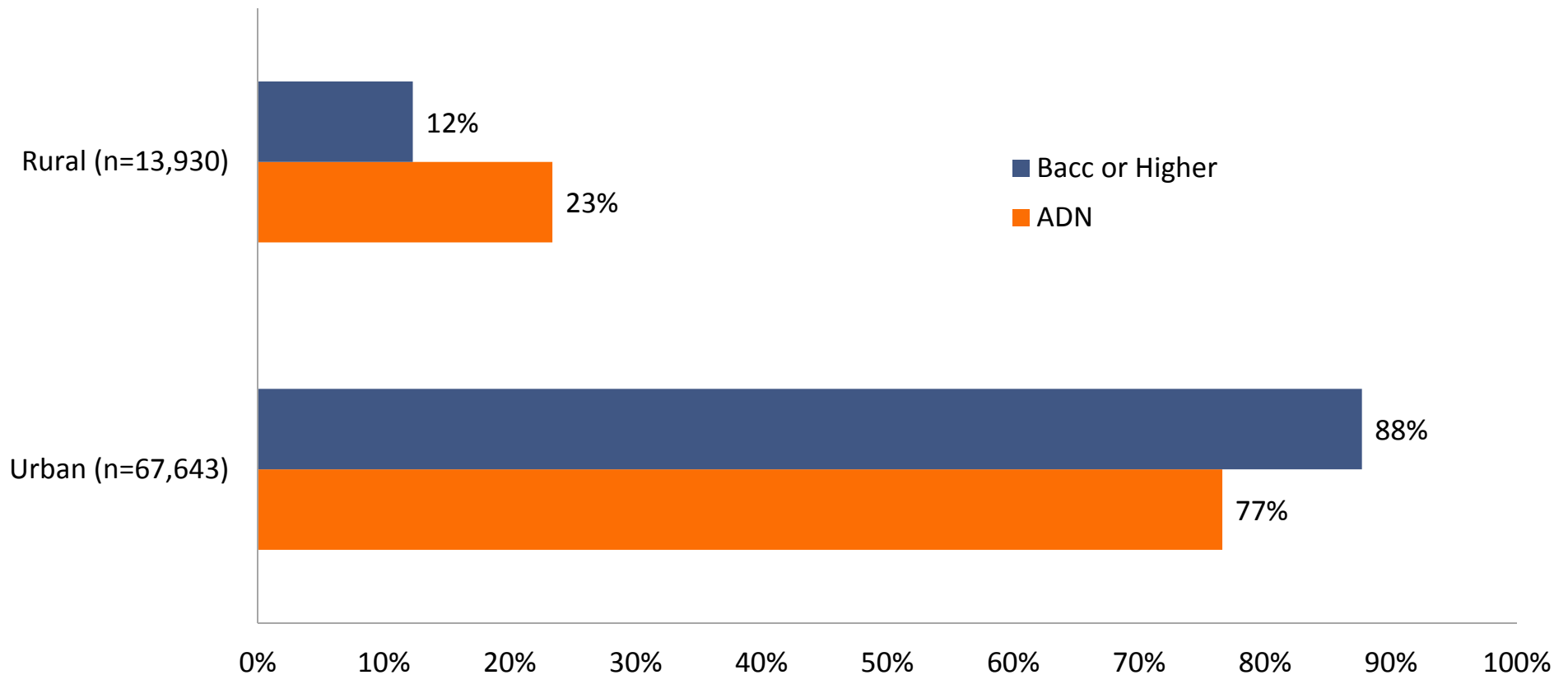


Note: Missing data ranged from 0.5% in 1982 to 11.5% in 2007

Note: Data include RNs who were actively practicing in North Carolina as of October 31, 2012. Source: North Carolina Health Professions Data System, with data derived from the NC Board of Nursing, 2012. Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, UNC-CH.

ADN nurses nearly twice as likely to work in rural counties

North Carolina Nursing Workforce by Rural Status and Highest Degree, 2012



Rural source: US Census Bureau and Office of Management and Budget, March 2013. "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs.

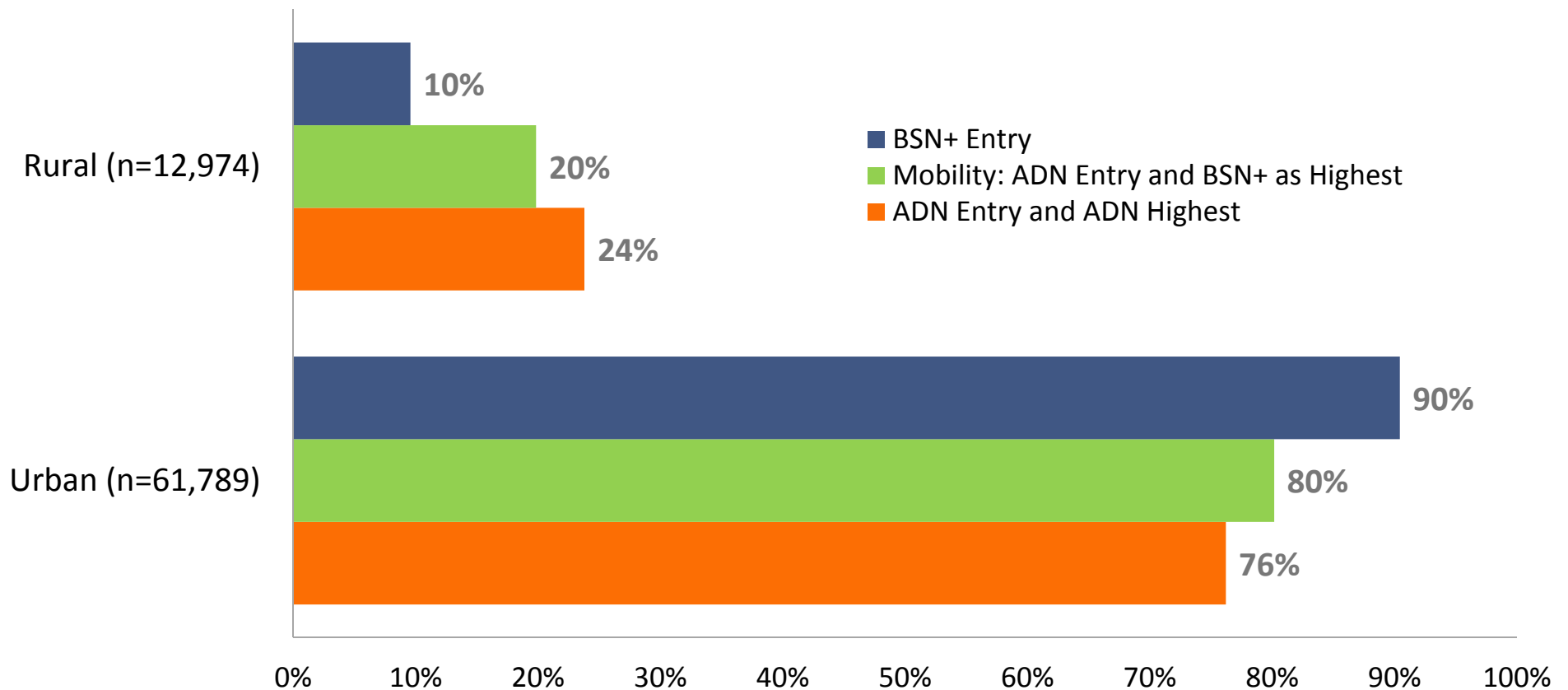
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Mobility nurses twice as likely as BSN+ nurses to practice in rural counties

North Carolina Nursing Workforce by Rural/Urban Setting and Degree, 2012



Rural source: US Census Bureau and Office of Management and Budget, March 2013. "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs.

Note: Data include RNs who were actively practicing in North Carolina as of October 31, 2012. **Source:** North Carolina Health Professions Data System, with data derived from the NC Board of Nursing, 2012. **Produced by:** Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, UNC-CH.

Funding: Where do states get money to support increased data collection?

- Start up costs: separate, new and shiny entity versus embedding data collection in existing entity
- Cost of maintaining system to ensure longitudinal data
- Who bears the costs? The licensure body?
The tax-payer? AHEC? Private foundations?
Professional associations?
- Staffing: need data management, analytic, cartographic, policy analysis, writing, presentation skills, etc.

Components and costs of NC HPDS*

Disclaimers:

- It is hard to associate a discrete cost with operating the HPDS because we are housed within the Sheps Center where
 - Staff are involved in other projects and partially covered by other funding sources;
 - Office space, furniture, basic necessities, and business/library/computer support services are provided.

*What works in NC (or any other state)
will not necessarily be what works best for you
-- or at the same cost.*

Components and costs of NC HPDS*

Staff

Paid Staff (FY 2014-15*) (~3.5 combined FTE)

- Director (PhD, Health Policy Mgmt) (.03 FTE)
- Research associate/project manager (MSPH, Health Policy Mgmt) (.7 FTE)
- Research associate/jack of all trades (MA, Geography) (.27 FTE)
- TBN – data coordinator (bacc or master's) (1.0 FTE)
- 2 SAS programmers (combined ~.8 FTE)
- Research assistant/admin (.02 FTE)
- 2 senior research fellows, retirees (~.02 FTE, volunteer)
- Grad and undergrad students, when we

Unpaid Staff (FY 2014-15*)

- Research analyst (PhD, Social Work)
- 2 Senior Advisors, retirees (PhD and DrPH)

* This will change for FY 2015-16 to add web developers for data visualizations

Components and costs of NC HPDS*

Operating costs

Infrastructure

- Computers and peripheral equipment
- Software
 - Microsoft Office
 - Statistical Programming: SAS (site license), Stata (\$), StatTransfer (\$)
 - GIS: ArcGIS (site license); MapInfo (\$; preferred software of cartographer)
 - Design: Adobe Creative Suites (\$)
 - Web visualizations: d3 (open source), javascript, Tableau (Public is free)
 - Some open source alternatives: R (statistical); QGIS (spatial analysis); Scribe, GIMP, Paint... (design)
- Supplies
- Printing
- Travel (e.g., in-state mileage for presentations)



The Health Workforce Technical Assistance Center

<http://www.HealthWorkforceTA.org>

Partnership between the Center for Health Workforce Studies at SUNY-Albany and the Sheps Center for Health Services Research at UNC Chapel Hill; funded by HRSA

Mission: to provide technical assistance to states and organizations that engage in health workforce planning

Services: Presentations, meeting facilitation, guidance on data collection, relationship-building, webinars

How can we help you?

What we can do:

- Provide information based on years of experience
- Connect you with other states doing similar work
- Present to (and help convince) stakeholders
- Facilitate meetings
- Review ideas, plans and progress

What we can't do:

- Set up a data system, collect or analyze data for you
- Provide funding to support your work

Don't hesitate to contact me!

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Program on Health Workforce Research & Policy
<http://www.healthworkforce.unc.edu>

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