

# Trends in the Nursing Workforce in North Carolina

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North Carolina Board of Nursing

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**UNC**

THE CECIL G. SHEPS CENTER  
FOR HEALTH SERVICES RESEARCH

# Presentation Overview

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- Background on the NC Health Professions Data System
- Licensed Practical Nurses
- Registered Nurses
- Nurse Practitioner Specialty Definitions
- Certified Nurse Midwifery data presented at NC General Assembly in Feb 2014

# Background:

## The North Carolina Health Professions Data System (HPDS)

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**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

Three main service lines:

1. Provide data and research
2. Conduct policy analyses
3. “Engaged scholarship” that serves state and nation

# Culture of “engaged scholarship”: serving the state and nation

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**HPDS as hub for reliable, trustworthy information.**

**Dissemination efforts in the most recent five years include:**

- 27 fact sheets and reports
- 85 presentations to local, state, national and international audiences
- 830 responses to requests for information—data, maps, information, quick turn-around analyses—from national and state policymakers, researchers, educators, others
- 34 states requesting technical assistance (since 2003) about building better health workforce planning systems

# NC's health workforce data are the envy of the other 49 states

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- Over 30 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 North Carolina HPDS is a collaborative effort

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- 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
- Funding provided by: NC AHEC Program Office, data request fees, project cross-subsidies, and the UNC-CH Office of the Provost (Health Affairs)

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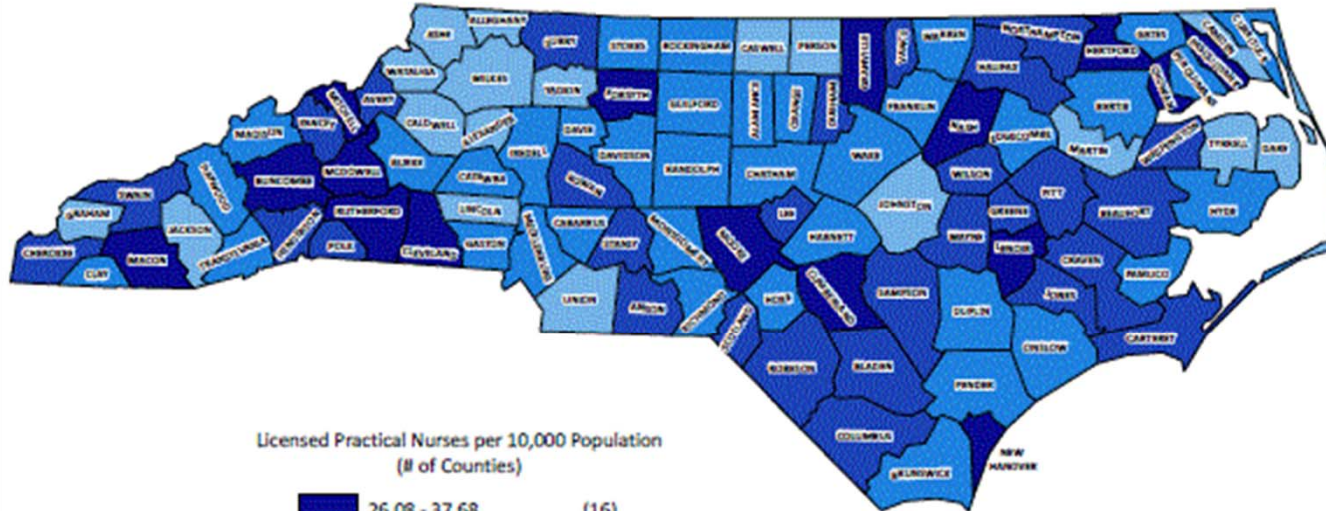
# Licensed Practical Nurses & Registered Nurses

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# LPN Distribution

Licensed Practical Nurses per 10,000 Population  
North Carolina, 2012



Licensed Practical Nurses per 10,000 Population  
(# of Counties)

	26.08 - 37.68	(16)
	18.55 - 26.07	(29)
	11.03 - 18.54	(37)
	0.01 - 11.02	(18)
	No Active LPNs	(0)

*N* = 18,043  
NC rate = 18.48

Note: Data include, active, Instate LPNs licensed in North Carolina as of October 31, 2012.

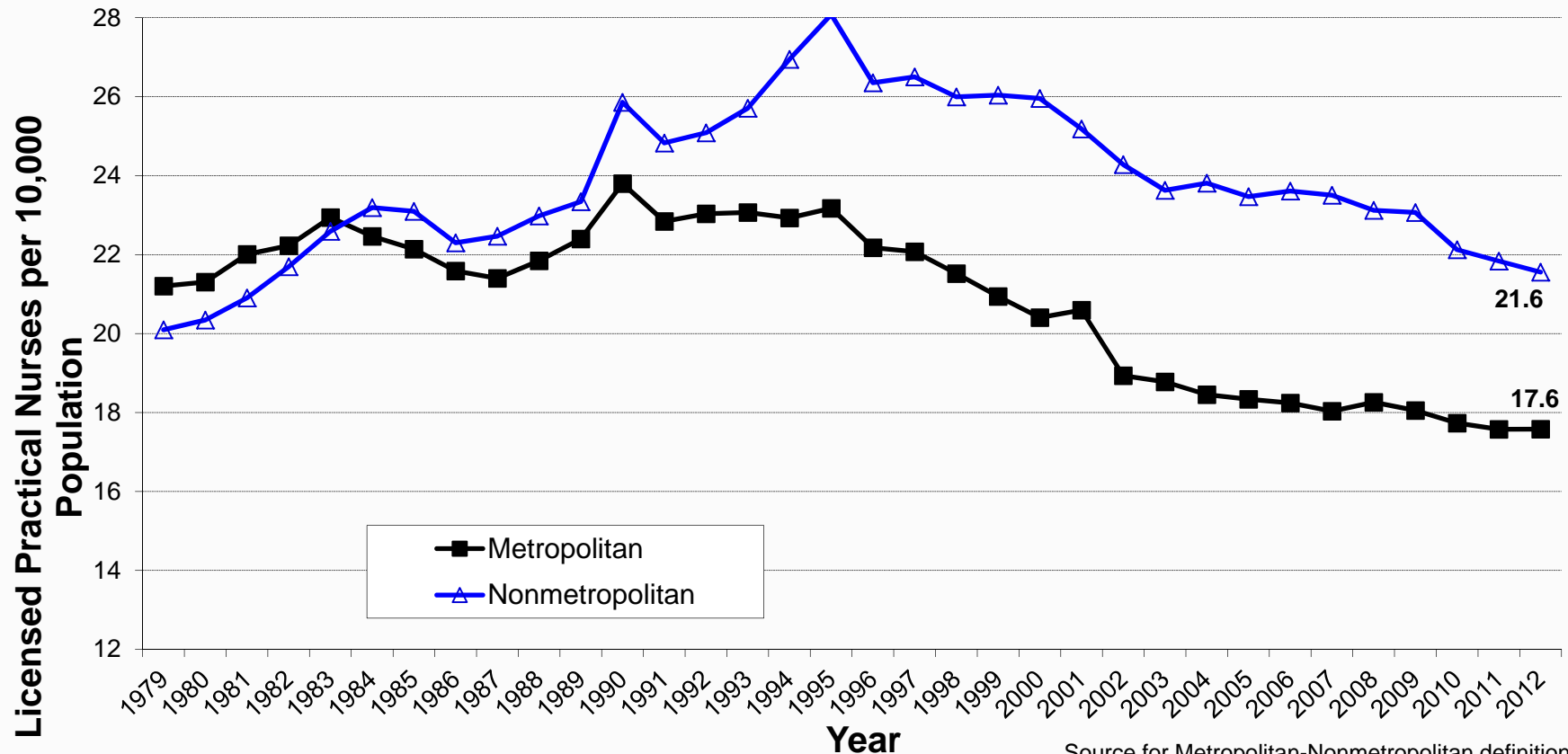
Source: North Carolina Health Professions Data System, with data derived from the North Carolina Board of Nursing, 2012.

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



# There are more LPNs per capita in rural counties

Licensed Practical Nurses per 10,000 by Metropolitan and Nonmetropolitan Counties, North Carolina, 1979 to 2012

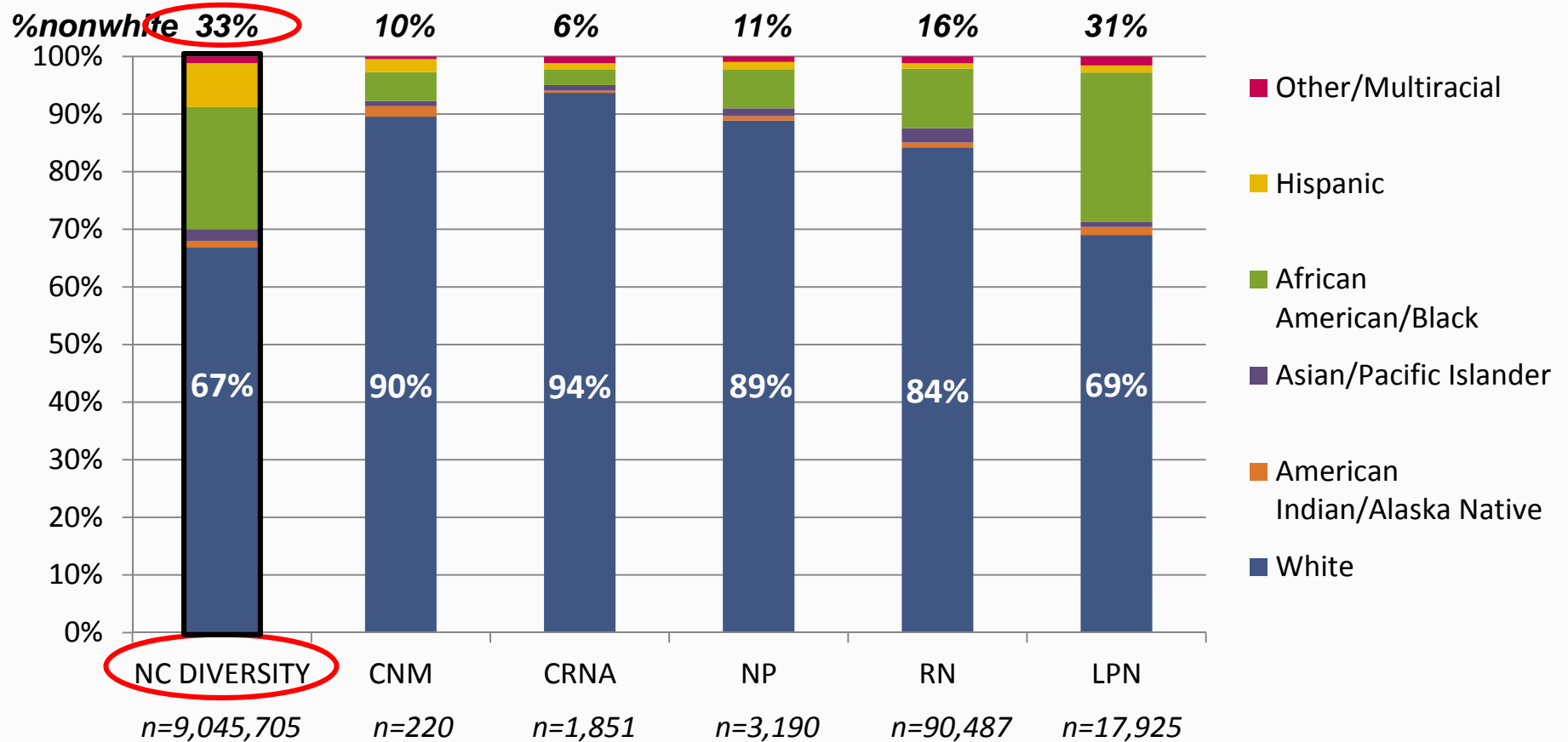


Sources: North Carolina Health Professions Data System, 1979 to 2011; North Carolina Office of State Planning. Figures include all licensed, active, in-state licensed practical nurses.

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

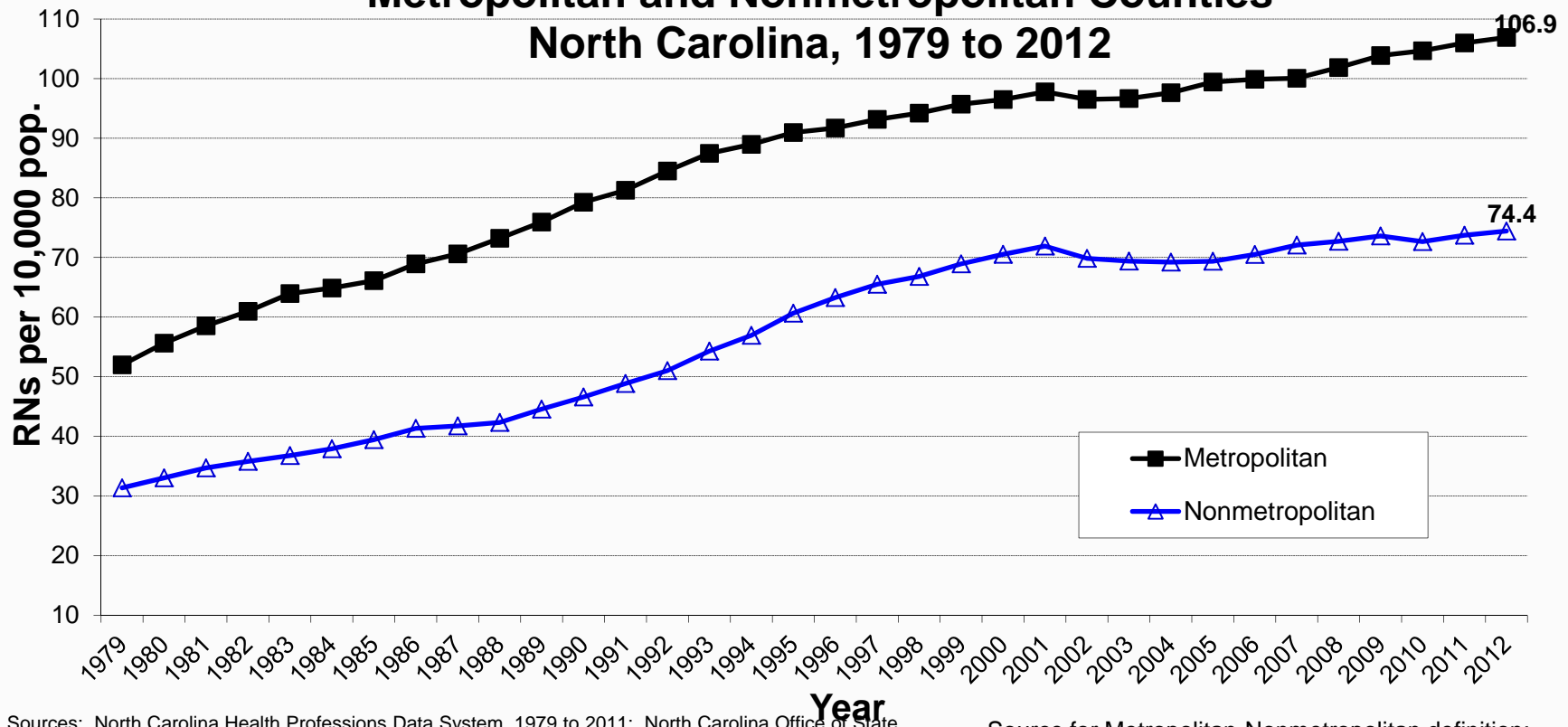
# Most nurses less diverse than state population but LPNs nearly match population diversity

APRN, RN & LPN Diversity vs. State Diversity, North Carolina, 2009



# Similar to other health professions, more RNs per capita in metro counties

**Registered Nurses per 10,000 Population by Metropolitan and Nonmetropolitan Counties  
North Carolina, 1979 to 2012**



Sources: North Carolina Health Professions Data System, 1979 to 2011; North Carolina Office of State Planning. Figures include all licensed, active, in-state registered nurses. 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.

# RN Education:

## 36% hold an ADN and 31% hold a BSN

RNs by Highest Educational Degree Held, North Carolina, 2012

Highest Degree Held	Number	Percent
Unknown	8,897	9.2%
Diploma	6,752	6.9%
Associate Degree	35,032	36.0%
Baccalaureate in Nursing	29,767	30.6%
Other Baccalaureate	4,831	5.0%
Masters in Nursing	8,508	8.8%
Masters in Other	2,726	2.8%
Doctorate in Nursing	359	0.4%
Doctorate in Other	350	0.4%
<b>Total</b>	<b>97,222</b>	<b>100.0%</b>

Notes: Data include active, instate RNs licensed in North Carolina as of October 31, 2012. Data are self-reported by the RN at time of initial licensure and subsequent renewals. 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 Board of Nursing, 2012.

# Of those initially licensed with an ADN, a slight uptick in advanced degrees

**Active NC RNs by Highest Current Degree with Associate's Degree as Degree for Licensure, 2007 & 2012**

<i>High degree</i>	<i>2007</i>		<i>2012</i>	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Missing	5,187	11.5%	4,948	9.3%
Diploma	93	0.2%	88	0.2%
Associate	30,118	66.8%	34,058	63.8%
Baccalaureate in nursing	4,763	10.6%	7,102	13.3%
Baccalaureate in other field	2,762	6.1%	3,762	7.0%
Master's in nursing	1,414	3.1%	2,344	4.4%
Master's in other field	677	1.5%	940	1.8%
Doctorate	25	0.1%	70	0.1%
Doctorate in other field	65	0.1%	82	0.2%
<b>Total</b>	<b>45,104</b>	<b>100.0%</b>	<b>53,394</b>	<b>100.0%</b>

Sources: North Carolina Health Professions Data System, 2007-2012 with data from the North Carolina Board of Nursing. Figures include all licensed, active, instate registered nurses as of October 31 of the respective year who self-reported an associate's degree as the degree for licensure.

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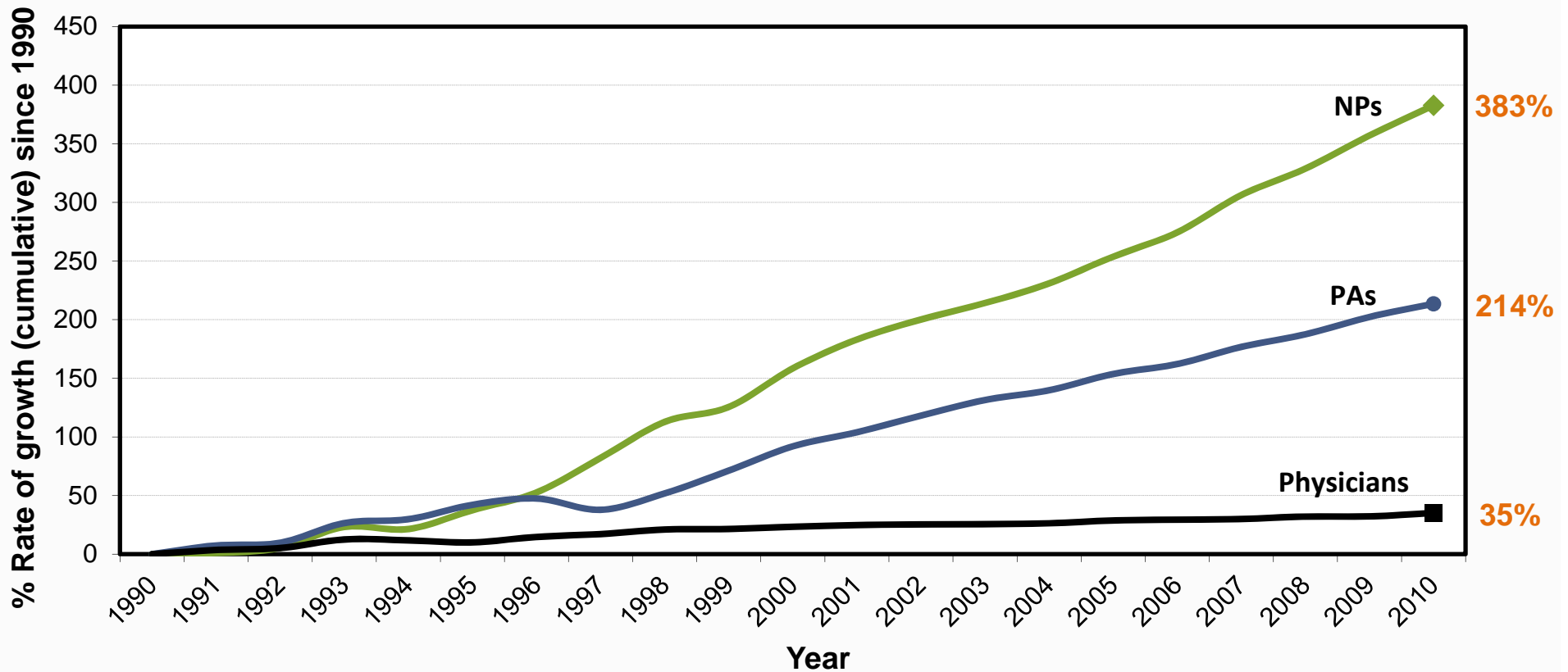
# **Nurse Practitioner (NP) Specialty Definitions**

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# Are NPs and PAs the answer to emerging primary care workforce needs?

Cumulative rate of growth since 1990:  
Physicians, NPs and PAs in North Carolina



Sources: North Carolina Health Professions Data System with data derived from the North Carolina Medical Board and North Carolina Board of Nursing, 1990 to 2010; Figures include all licensed, active, instate, non-federal, non-resident-in-training physicians, PAs and NPs.

# 1<sup>st</sup> Definition: NPs by Type of Education Program Completed

## Nurse Practitioner Education Type, North Carolina, 2011

Primary Care	Number	Percent
Family Nurse Practitioner	2,165	55%
Adult NP	693	17%
Pediatric NP	312	8%
Family Planning NP	0	0%
Women's Health NP	72	2%
School NP	0	0%
<b>Total Primary Care</b>	<b>3,242</b>	<b>82%</b>

Specialty Care	Number	Percent
Geriatric	74	2%
Ob/gyn	75	2%
Acute Care NP	114	3%
Neonatal	205	5%
Psychiatric NP	94	2%
Occupational NP	2	0%
Phys. Med. Nurse (Rehab)	0	0%
Pediatric acute care NP	29	1%
<b>Total Specialty Care</b>	<b>593</b>	<b>15%</b>
<i>Note: Missing education type</i>	137	3%



# 2<sup>nd</sup> Definition: NPs by self-reported specialty categories

## Nurse Practitioner Medical Specialty Type, North Carolina, 2011

Primary Care Specialties	Number	Percent	Non-primary care specialties	Number	Percent
Family Medicine (FM)	988	25%	Neonatal-Perinatal care	215	5%
General Practice	97	2%	Psychiatry	175	4%
Pediatrics	308	8%	OB-GYN	154	4%
Internal Medicine	314	8%	Geriatrics	121	3%
<b>Sub-total Primary Care NPs</b>	<b>1,707</b>	<b>43%</b>	Emergency Medicine	114	3%
			Fam Med/Hospice & Palliative	101	3%
			Gynecology	54	1%
			Neurology	53	1%
			Vascular Neurology	49	1%
			Gastroenterology	48	1%
			Other Specialties	1,175	30%
			<b>Sub total specialty NPs</b>	<b>2,259</b>	<b>57%</b>

Note: 6 NPs were missing specialty data.

# Summary of Findings

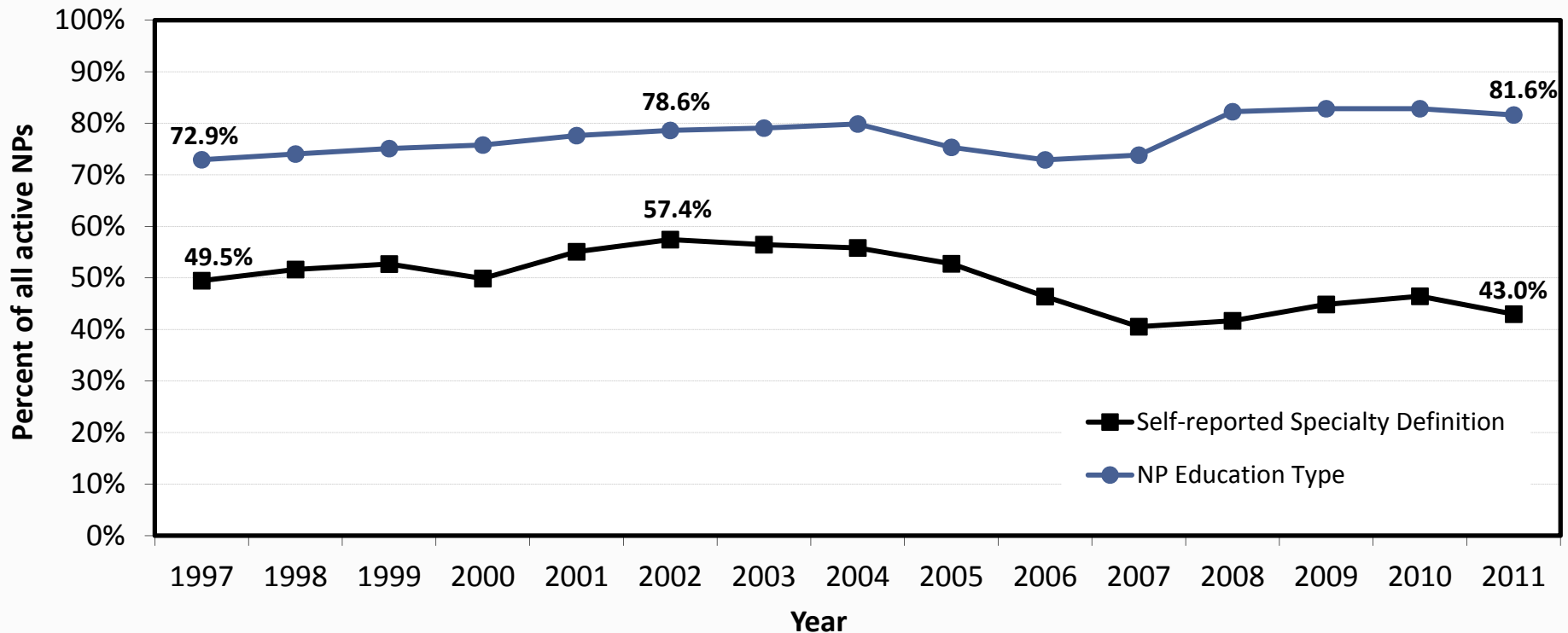
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- NP education and national credential type yields highest estimates of primary care (~80%)
- NP self-reported specialty and practice setting produce much lower estimates (~50%)
- Does this mean that NPs are prepared to practice in primary care but finding jobs in specialty care?



# NPs are trained to practice in primary care, but many practice in specialty care

Comparison of NP Education Credential versus Self-Reported Specialty in Primary Care, North Carolina, 1997-2011



**Notes:** Data for primary specialty include active, in-state NPs indicating a primary specialty of family practice, general practice, internal medicine, Ob/Gyn, or pediatrics, who were licensed in NC as of October 31 of the respective year. Data for physician extender type include active-instate NPs indicating a physician extender type of family nurse practitioner, adult nurse practitioner, ob/gyn nurse or pediatric nurse practitioner who were licensed as of October 31 of the respective year. **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 NC Medical Board. Chart prepared on 12/07/2012.

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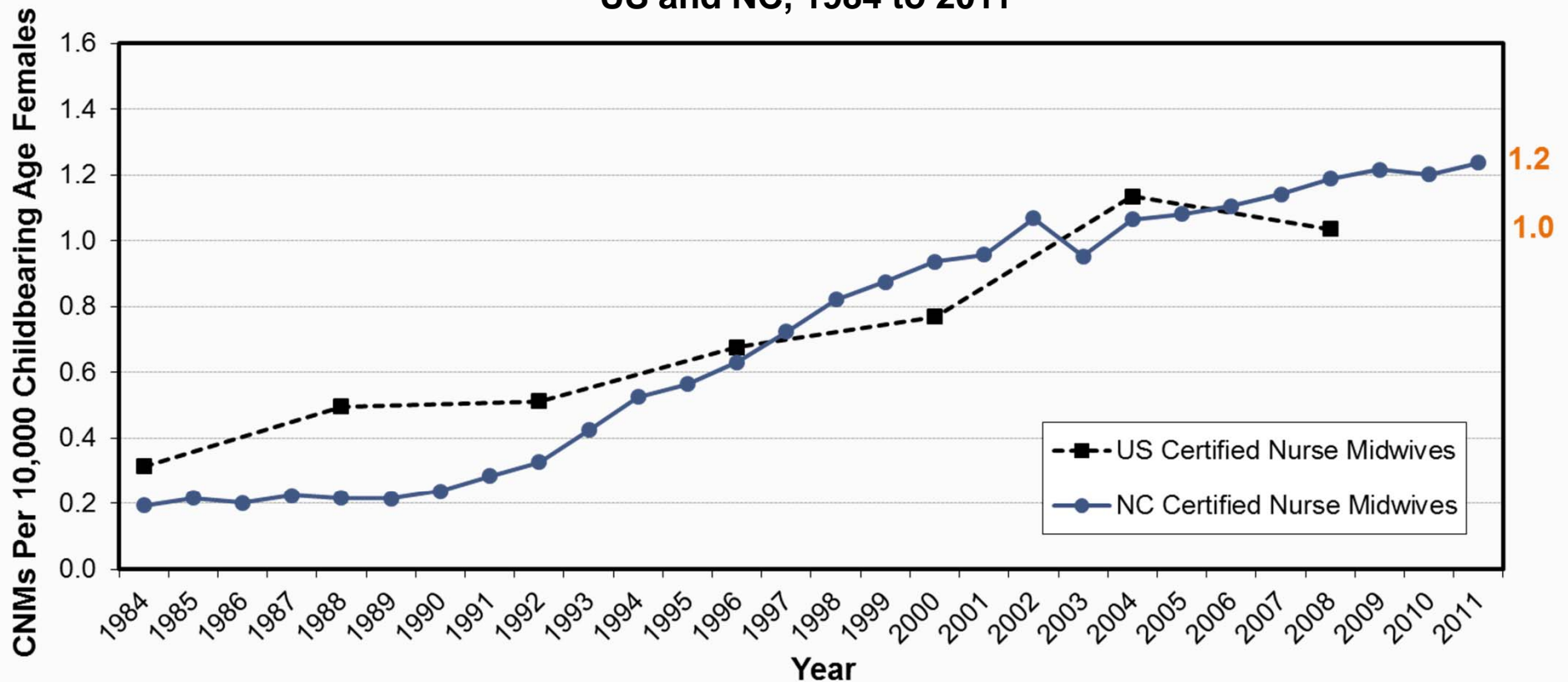
# **Certified Nurse Midwives (CNMs) & Supervision**

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# NC has about average supply of CNMs relative to United States average

**Certified Nurse Midwives (CNMs) per 10,000 Childbearing Age\* Females, US and NC, 1984 to 2011**

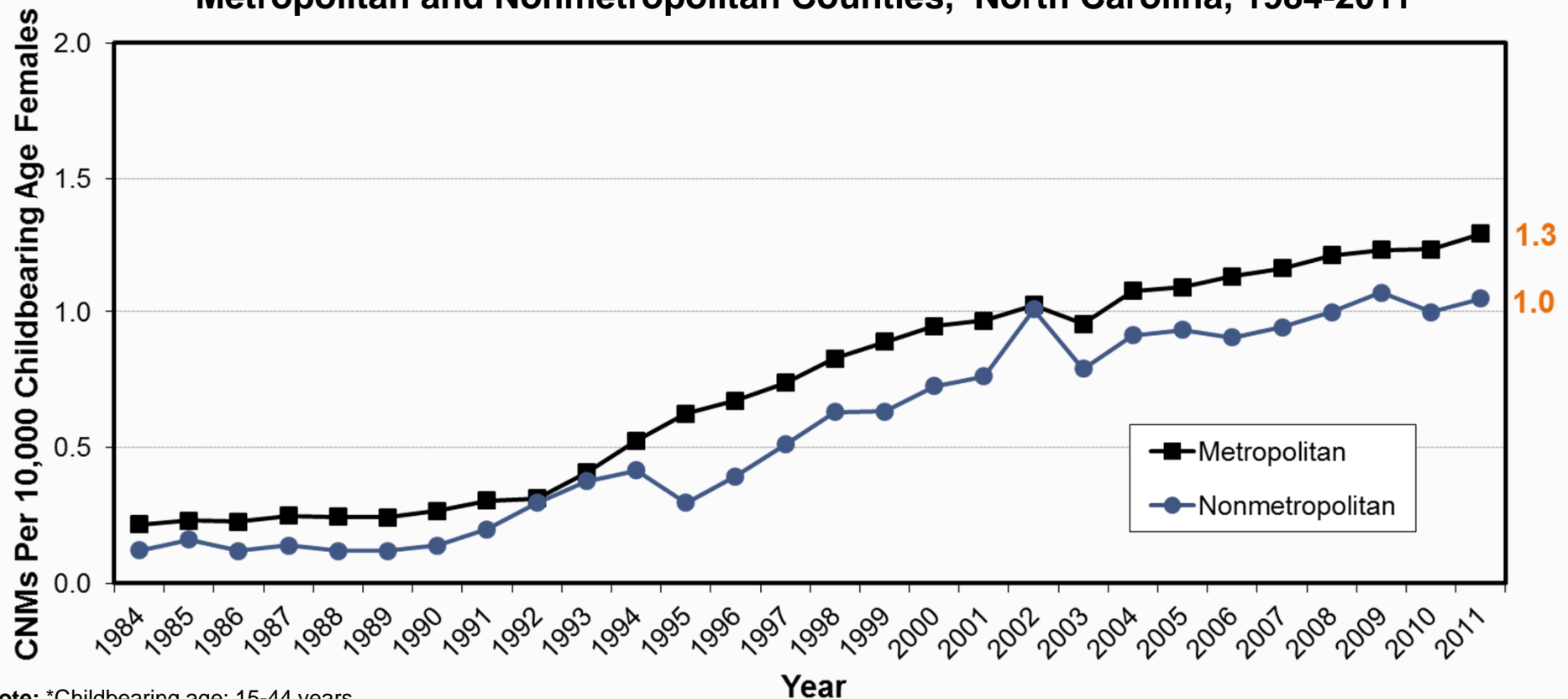


\*Notes: Figures include all licensed, active, instate certified nurse midwives. Childbearing age:15-44 years.

Sources: North Carolina Health Professions Data System, 1979 to 2012; The Registered Nurse Population- Findings from the National Sample Survey of Registered Nurses, 2008, 2004, 2000, 1996,1992, 1988, 1984, 1980; North Carolina Office of State Planning; U.S. Bureau of the Census; North Carolina population data are smoothed figures based on 1980, 1990, 2000, and 2010 Censuses.

# And a relatively even distribution of CNMs in rural and urban areas

Certified Nurse Midwives (CNMs) per 10,000 Childbearing Age\* Females by Metropolitan and Nonmetropolitan Counties, North Carolina, 1984-2011

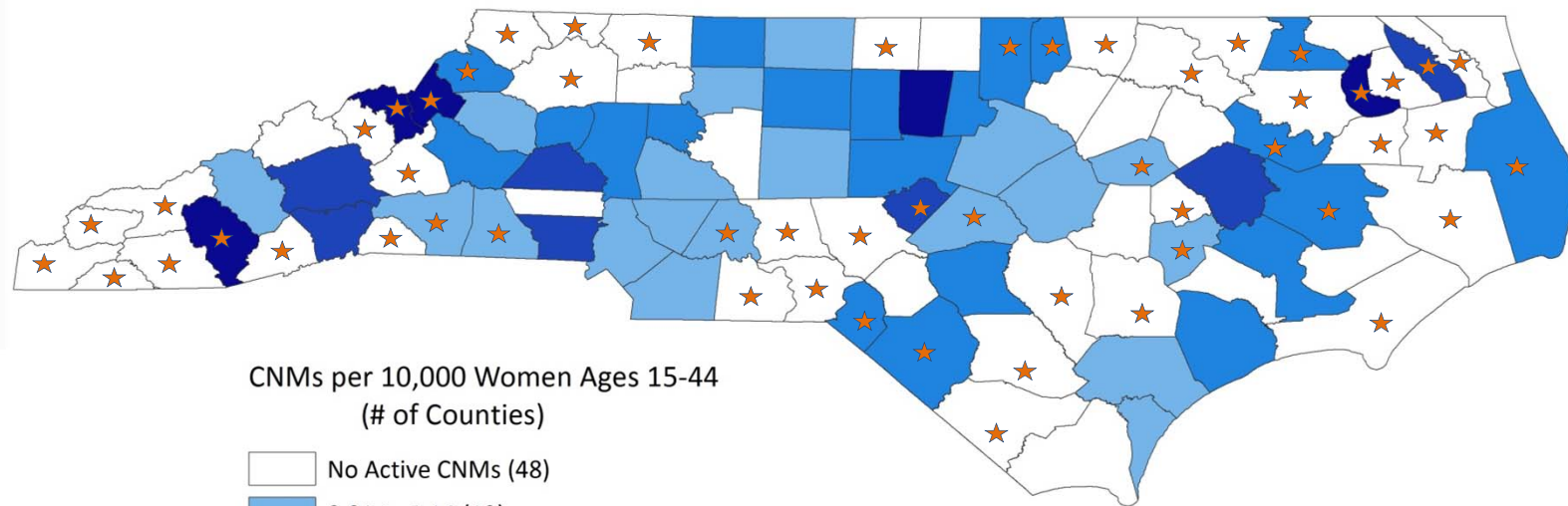


Note: \*Childbearing age: 15-44 years.

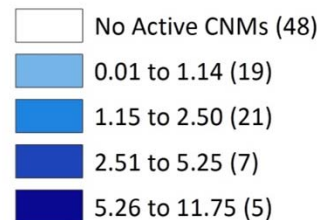
Sources: North Carolina Health Professions Data System, with data from the North Carolina Board of Nursing; Midwifery Joint Committee, 1984 to 2011; North Carolina Office of State Planning. Figures include all licensed, active, in-state CNMs. North Carolina population data are based on 1980, 1990, 2000, and 2010 Censuses and the NC Office of State Budget Management. Source for Metropolitan-Nonmetropolitan definition: Office of Management and Budget, 2013.

# About half (47) of NC's counties do not have a CNM; distribution generally in "clusters" around state

## Certified Nurse Midwives (CNMs) per 10,000 Childbearing Age\* Females North Carolina, 2011



CNMs per 10,000 Women Ages 15-44  
(# of Counties)



NC= 1.24 per  
10,000 Population

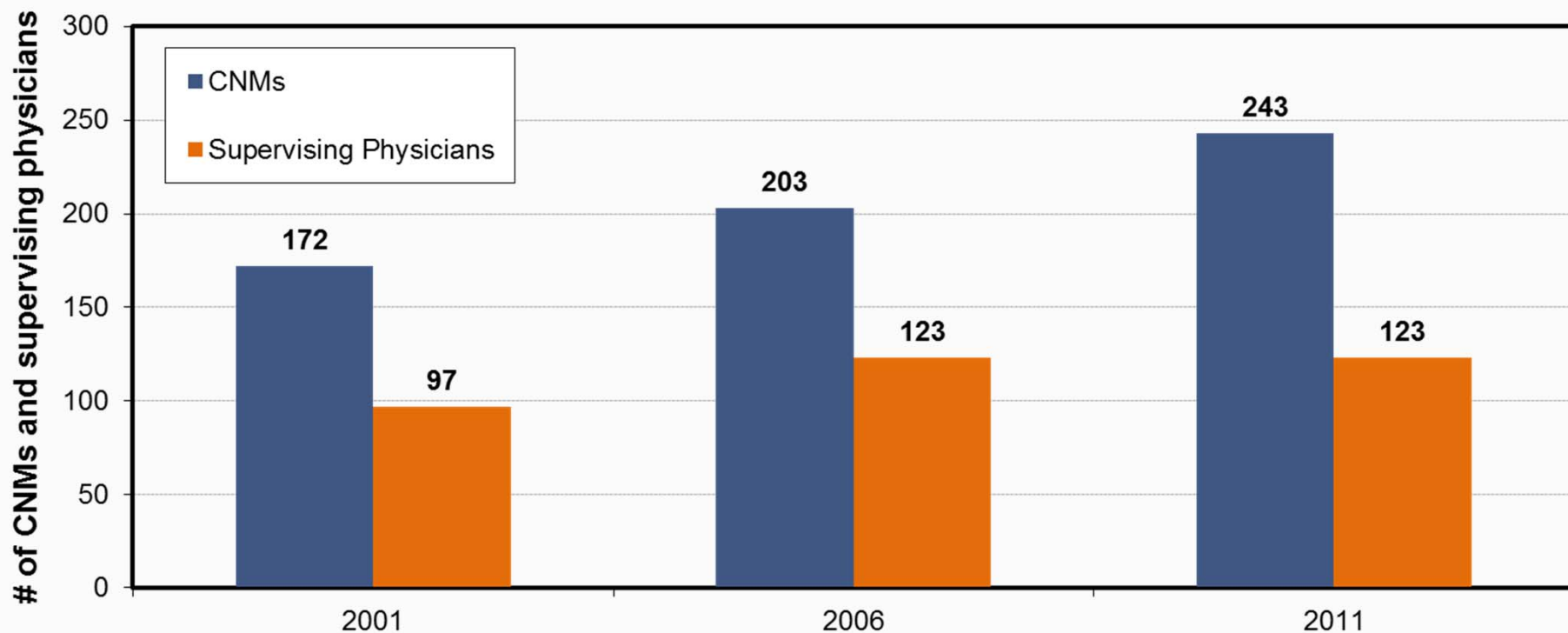
★ Nonmetropolitan County (54)

N = 243

**Note:** Data include active, in-state CNMs licensed in North Carolina as of October 31, 2011. \*Childbearing age: 15-44 years. **Sources:** North Carolina Health Professions Data System, with data from the North Carolina Board of Nursing; Midwifery Joint Committee, 2011; US Census Bureau and Office of Management and Budget, 2013.

# State gained 40 CNMs in last 5 years but saw no increase in number of supervising physicians

Number of CNMs and Supervising Physicians, North Carolina, 2001-2011



**Note:** Data include active, in-state CNMs licensed in North Carolina as of October 31, 2011. **Sources:** North Carolina Health Professions Data System, with data from the North Carolina Board of Nursing; Midwifery Joint Committee, 2011; US Census Bureau and Office of Management and Budget, 2013.



# Result:

## More CNMs per supervising physician

Number of CNMs per Supervising Physician, North Carolina, 2001-2011

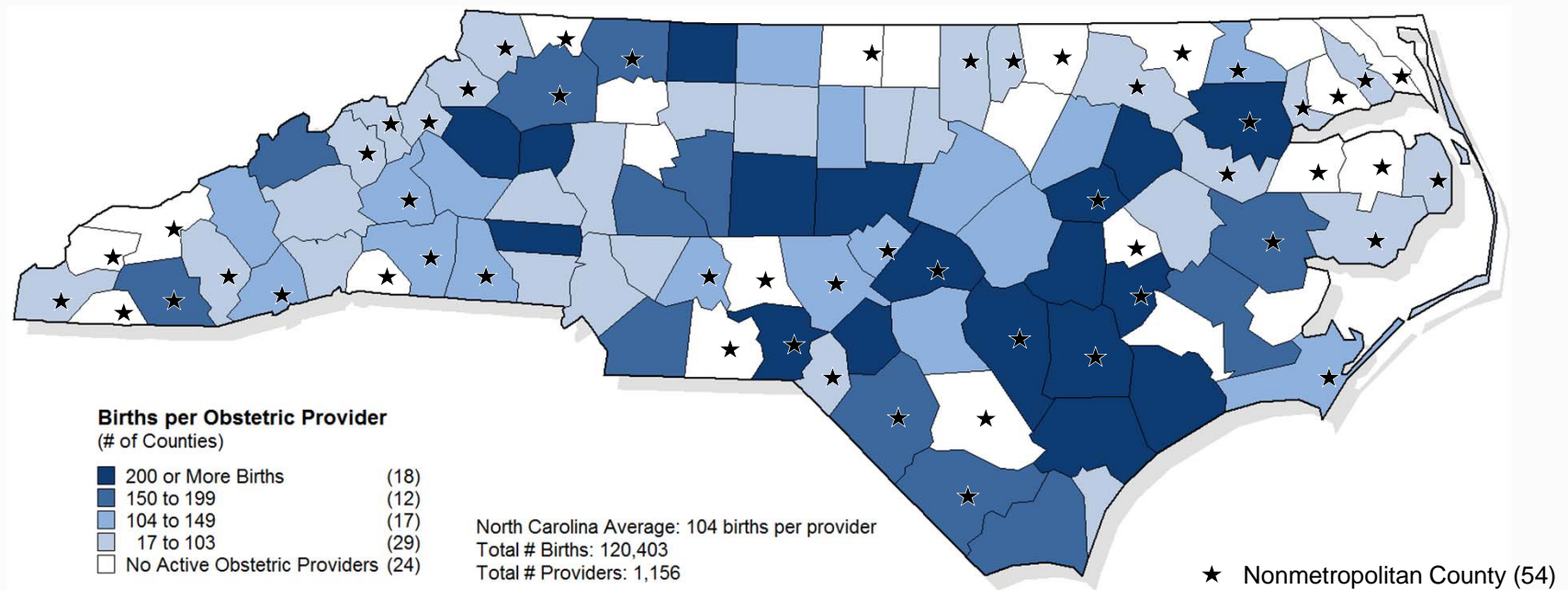
# of CNMs Supervised	# of Physicians Supervising by Year		
	2001	2006	2011
1	61	83	81
2	21	21	16
3	3	12	10
4	6	2	4
5	3	1	3
6	2	1	2
7	0	1	2
8	1	2	3
9	0	0	1
10	0	0	1
<b>Total</b>	<b>97</b>	<b>123</b>	<b>123</b>

**In 2011, 57 CNMs (24% of workforce) were supervised by one of 7 physicians**

**Note:** Data include active, in-state CNMs licensed in North Carolina as of October 31, 2011. **Sources:** North Carolina Health Professions Data System, with data from the North Carolina Board of Nursing; Midwifery Joint Committee, 2011; US Census Bureau and Office of Management and Budget, 2013.

# 24 counties have no obstetric care provider, either physician or CNM

## Resident Births per Provider of Obstetric Deliveries North Carolina, 2011



**Note:** Data include active, in-state Certified Nurse Midwives (CNMs) who were licensed in North Carolina as of October 31, 2011, and active, in-state, non-federal, non-resident-in-training physicians who were licensed in North Carolina as of October 31, 2011 and reported that they provide obstetric deliveries.  
**Source:** Providers: North Carolina Health Professions Data System (NC HPDS), with data derived from the North Carolina Board of Nursing and North Carolina Medical Board, 2011. Births: Department of Health and Human Services, Vital Statistics, [linc.state.nc.us](http://linc.state.nc.us), accessed 2/25/14.

# Thank you!

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