Health Workforce Trends and Challenges in North Carolina and the United States

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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

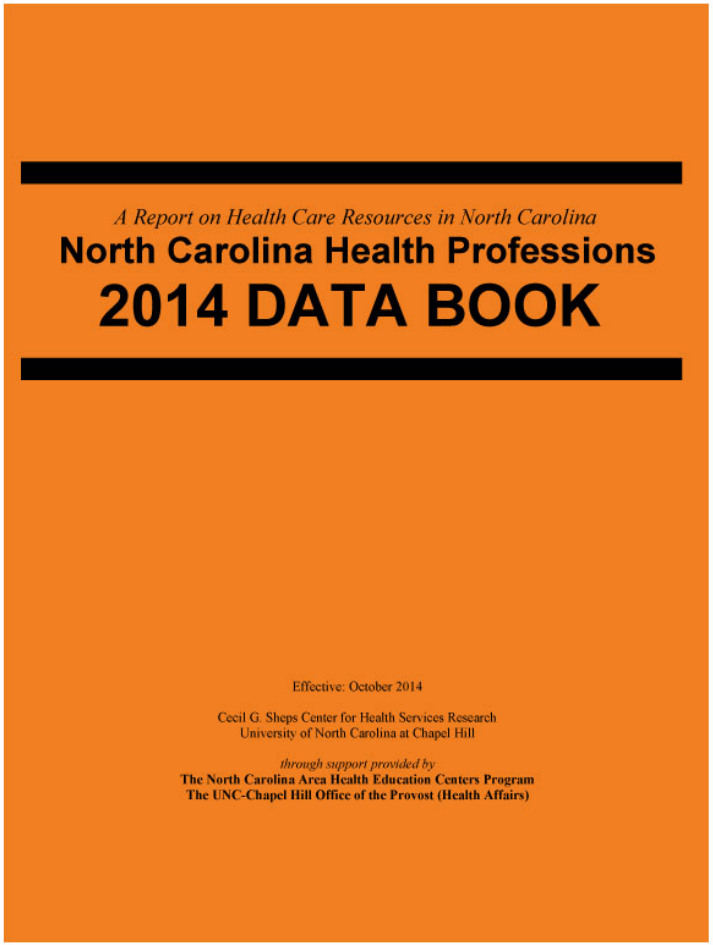
- Based at Cecil G. Sheps Center for Health Services Research at UNC-CH, but mission is statewide
- A collaboration between the Sheps Center, NC AHEC and the health professions licensing boards
- System is independent of government and health care professionals

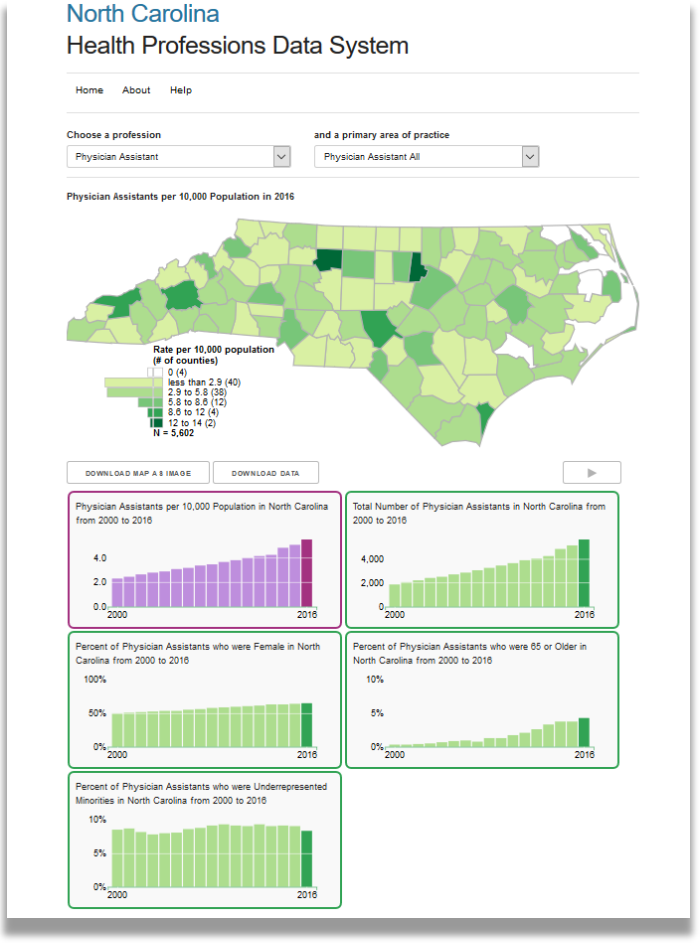
North Carolina Health Professions Data System (HPDS)

- 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

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



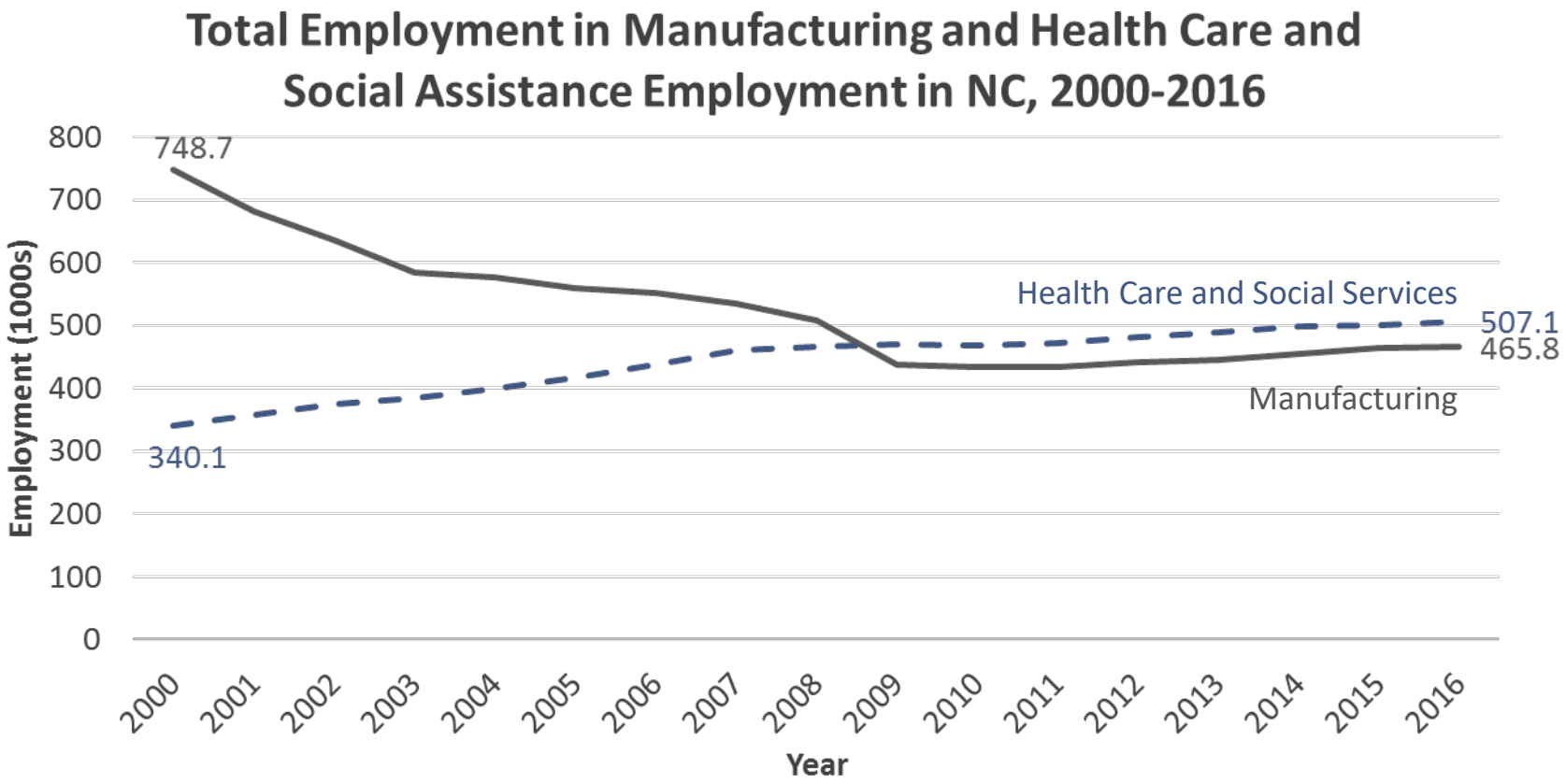


This Presentation:

- Current workforce trends in the US & NC
- Nurse Education
- Medical School and Residency
- Big picture health system change:
  What does it mean for the workforce?

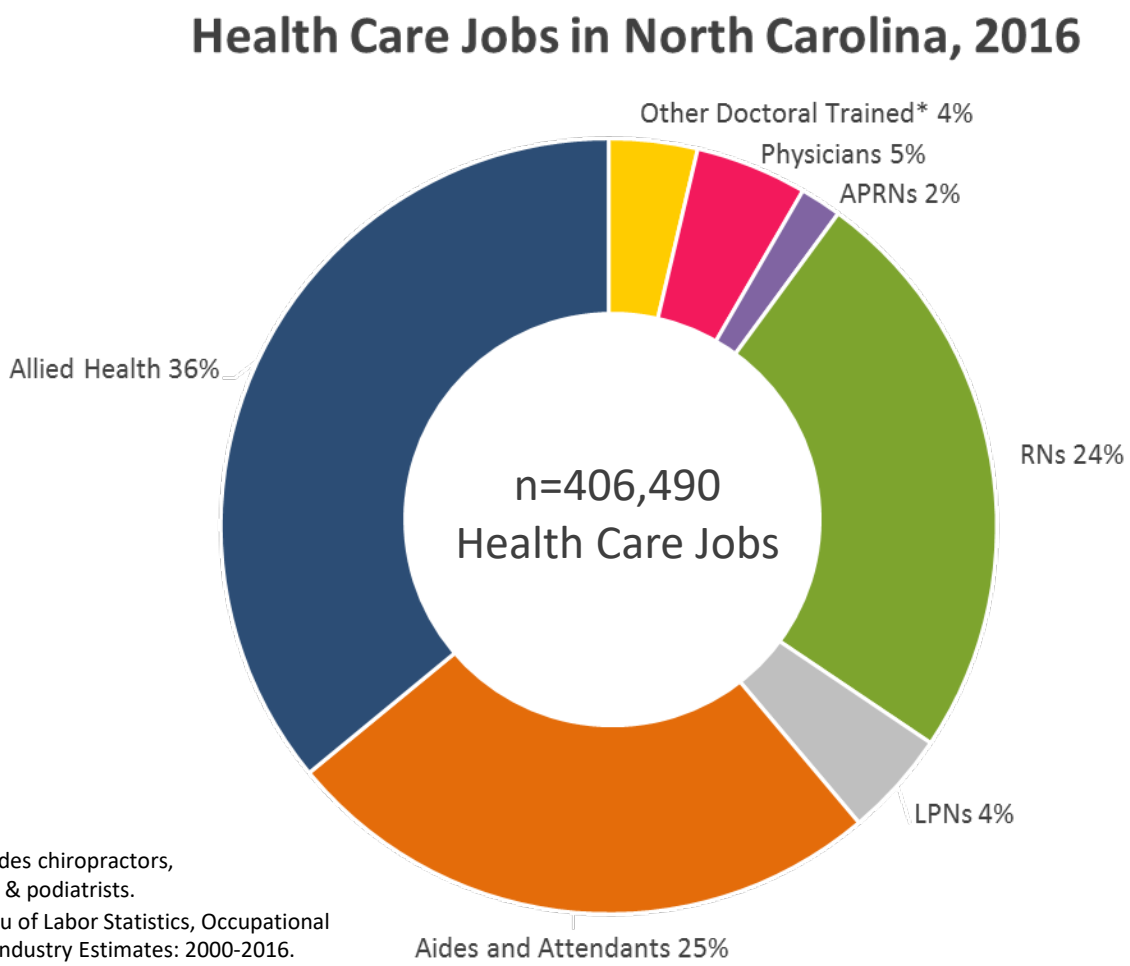
Current Health Workforce Trends

In 2009, health care jobs surpassed manufacturing jobs



Source: North Carolina Health Professions Data System with data derived from the North Carolina Department of Commerce Labor and Economic Analysis Division, Current Employment Statistics (CES), 2000-2016. Data include unadjusted employment as of October of the given year. Downloaded on April 12, 2017 from: http://d4.nccommerce.com/CesSelection.aspx.
Produced By: Program on Health Workforce Research & Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

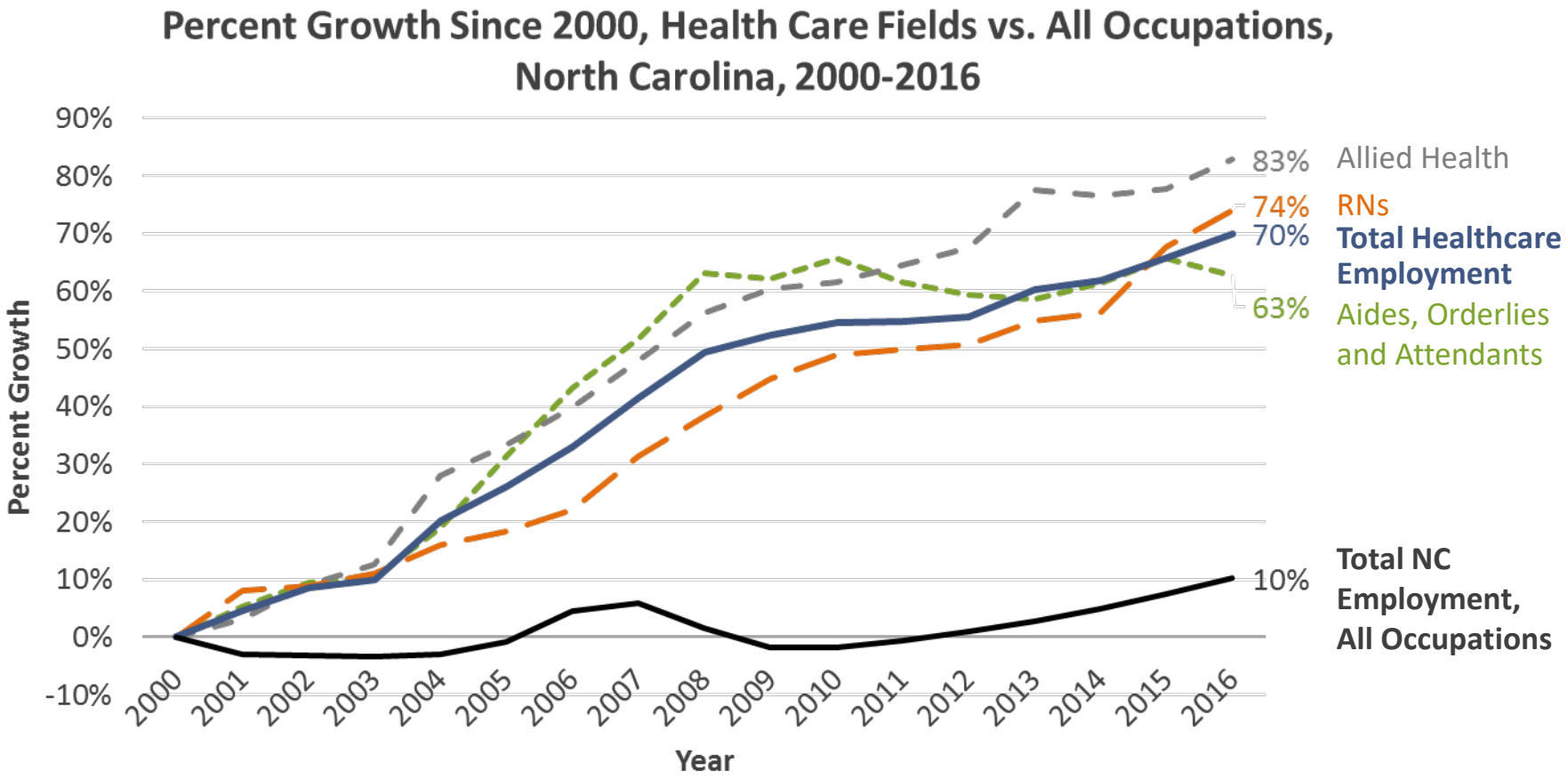
Two of every three health care jobs is in allied health or nursing



*Note: Other Doctoral Trained includes chiropractors, dentists, optometrists, pharmacists, & podiatrists.

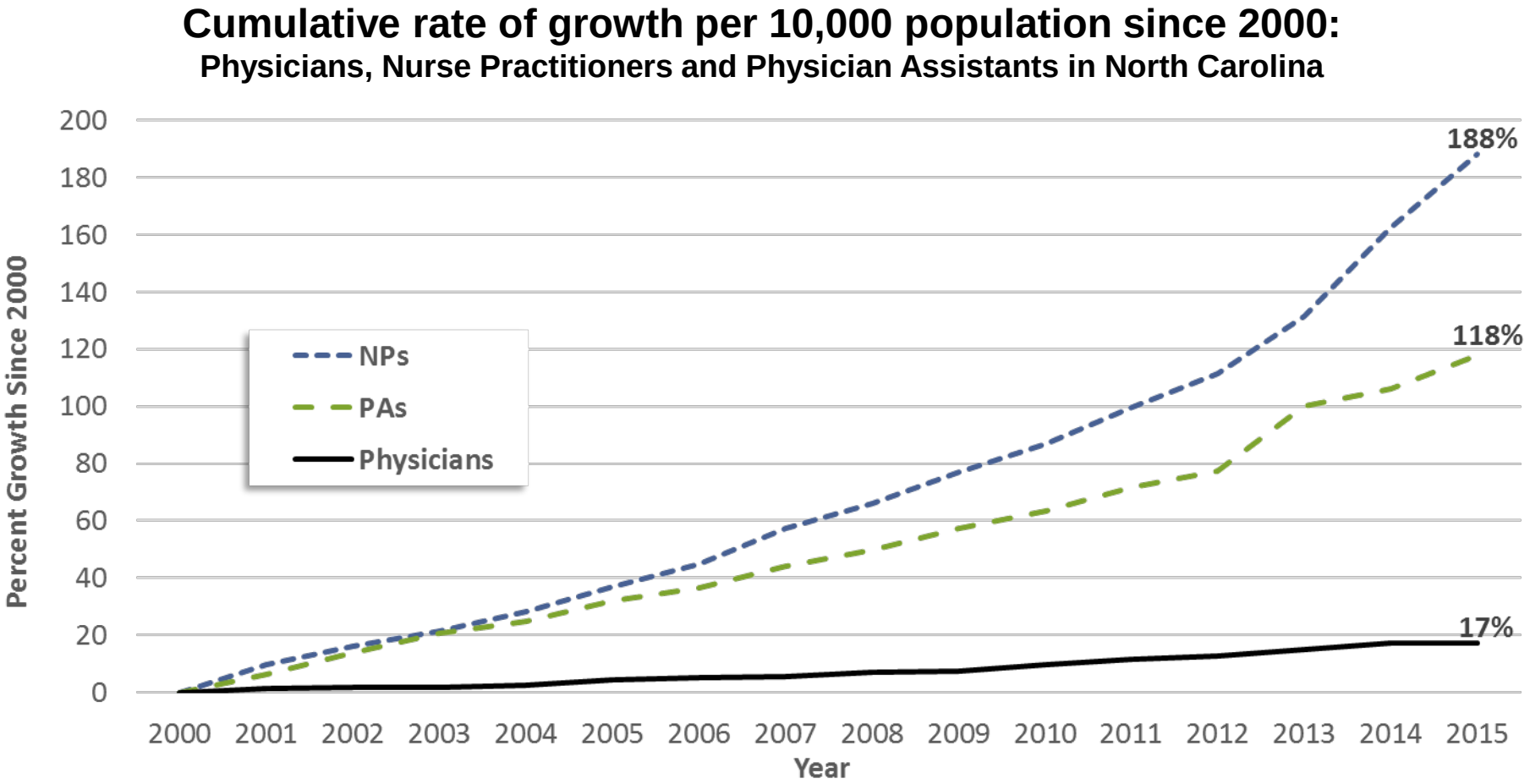
Source: Data derived from US Bureau of Labor Statistics, Occupational Employment Statistics, State Cross-Industry Estimates: 2000-2016. URL: http://www.bls.gov/oes/oes_dl.html. Accessed 12 April 2017

Nursing and allied health jobs have grown rapidly



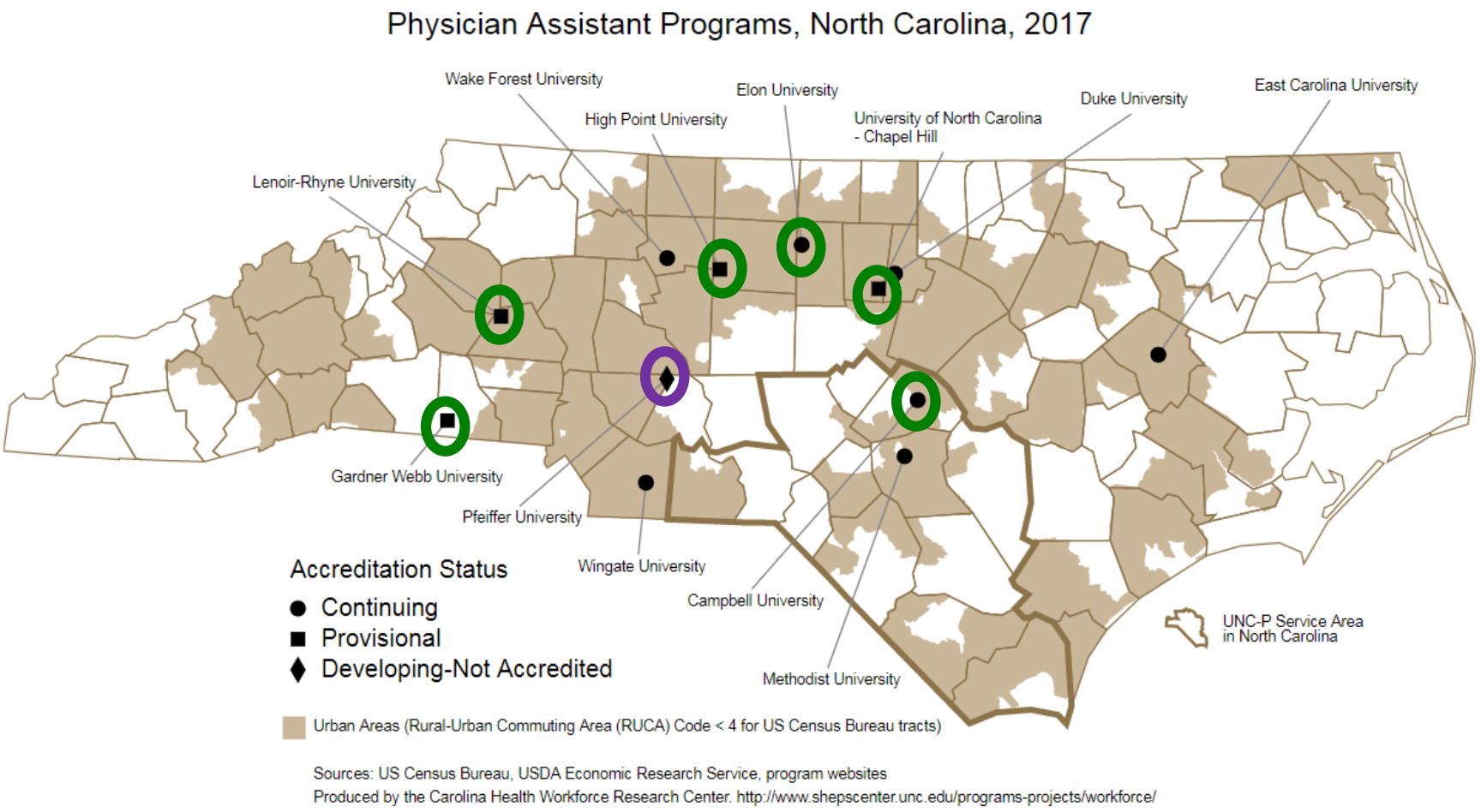
Source: North Carolina Health Professions Data System with Data derived from US Bureau of Labor Statistics, Occupational Employment Statistics, State Cross-Industry Estimates: 2000-2016. URL: http://www.bls.gov/oes/oes_dl.html. Accessed 12 April 2017.
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Over the past 15 years, NC has seen fast growth in the NP and PA workforce

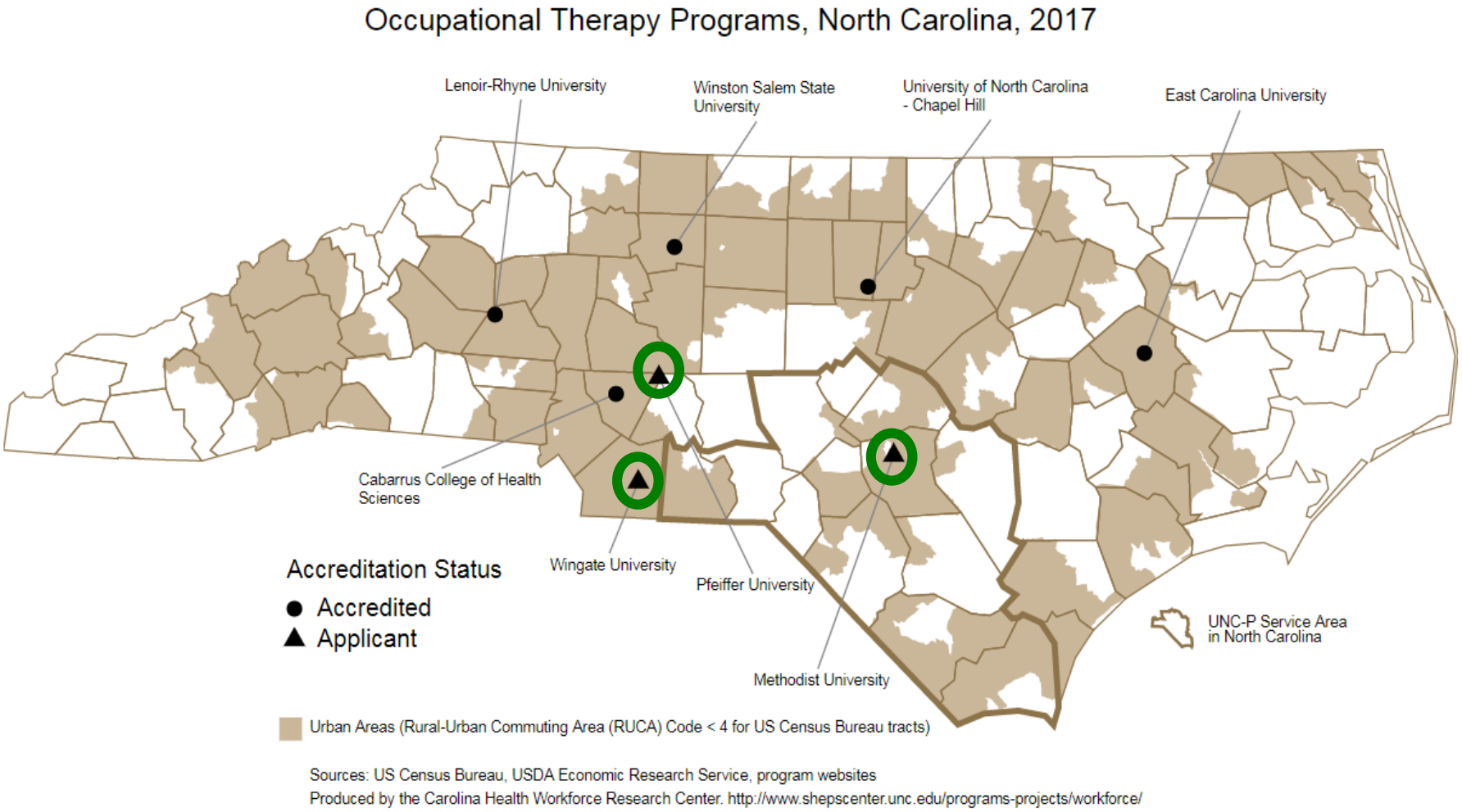


Sources: North Carolina Health Professions Data System with data derived from the North Carolina Medical Board and North Carolina Board of Nursing, 2000 to 2015.
Figures include all active, instate, non-federal, non-resident-in-training physicians, and all active, instate PAs and NPs licensed as of October 31 of the respective year.
Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

NC added 6 new PA schools since 2011 and a 7th is under development



Training program expansion trends in NC go beyond NPs & PAs



Workforce supply is increasing …but I've heard there's a "physician shortage"

Source: AAMC News
Link: https://news.aamc.org/press-releases/article/workforce_projections_03142017/
.

News of physician shortages grabs headlines

The New York Times

Tuesday, April 22, 2014 | Today's Paper | Personalize Your Weather

Success of health reform hinges on hiring 30,000 primary care doctors by 2015



Doctor shortage, increased demand could crash health care system

By **Jen Christensen**, CNN

updated 5:37 PM EDT, Wed October 2, 2013



SHUTTERSTOCK/FILE

Some doctors worry patients who can't get in to see primary care physicians will clog up hospital emergency rooms.

DOCTOR

Lots

By DANI

e Washington Post

On Exhausted Physicians

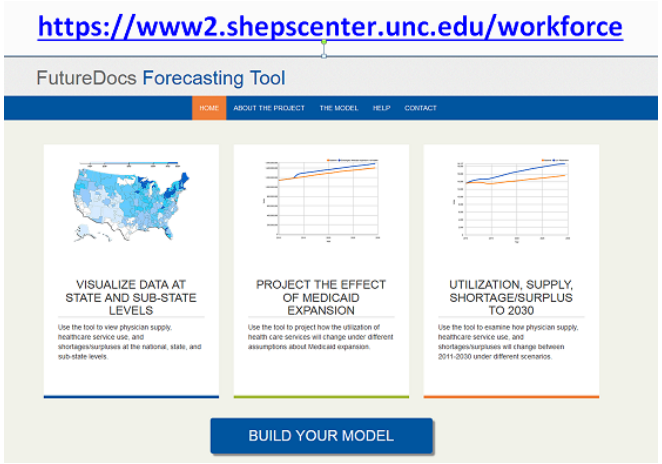
Gasp!



Source: http://www.thedoctorshortage.com/pages/shortage

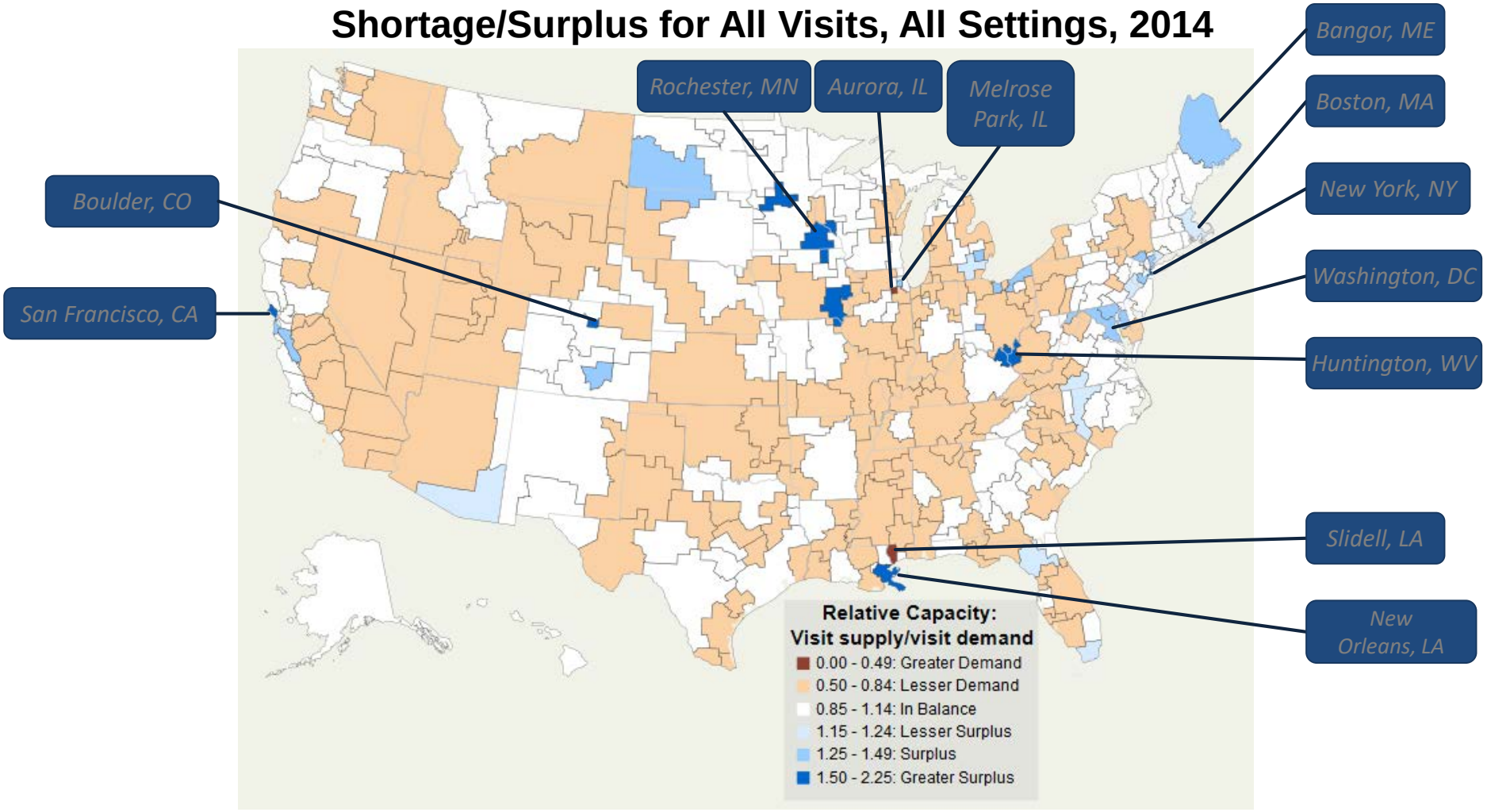
Experts disagree about whether the United States will face a shortage

- AAMC projects shortfalls of between 12,500 and 31,000 primary care physicians and 46,100 and 90,400 total physicians by 2025[1]
- Federal government (HRSA) forecasts shortage of 6,400 primary care physicians in 2020[2] with increased use of NPs and PAs
- We released model in July 2014 that suggests overall supply will be adequate, more pressing issue is maldistribution



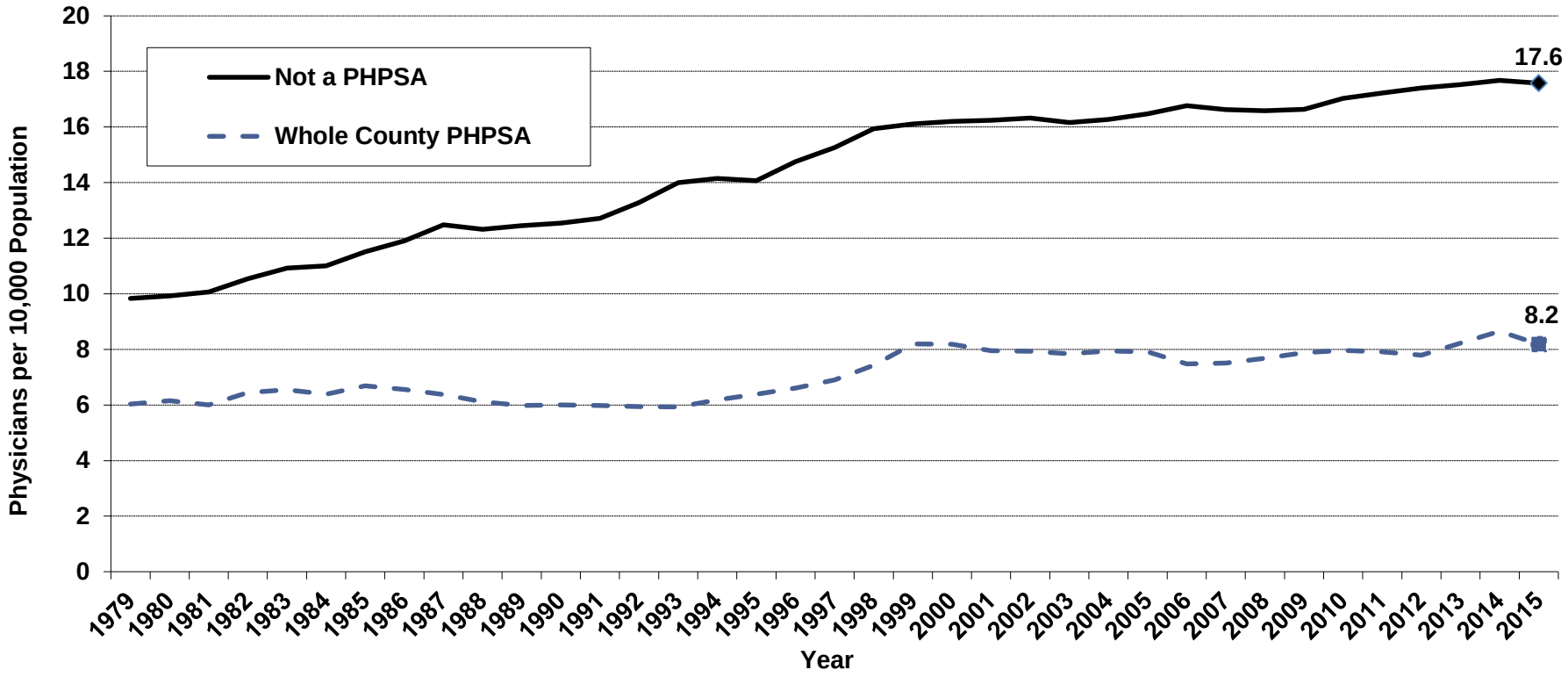
[1] AAMC, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf?cm_mmc=AAMC-_-ScientificAffairs-_-PDF-_-ihsreport
[2] HRSA, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/projectingprimarycare.pdf

Our FutureDocs model highlights that we are a nation of “haves” and “have-nots”



The real issue is maldistribution

Physicians per 10,000 population by Persistent Health Professional Shortage Area (PHPSA) Status, North Carolina, 1980 - 2015



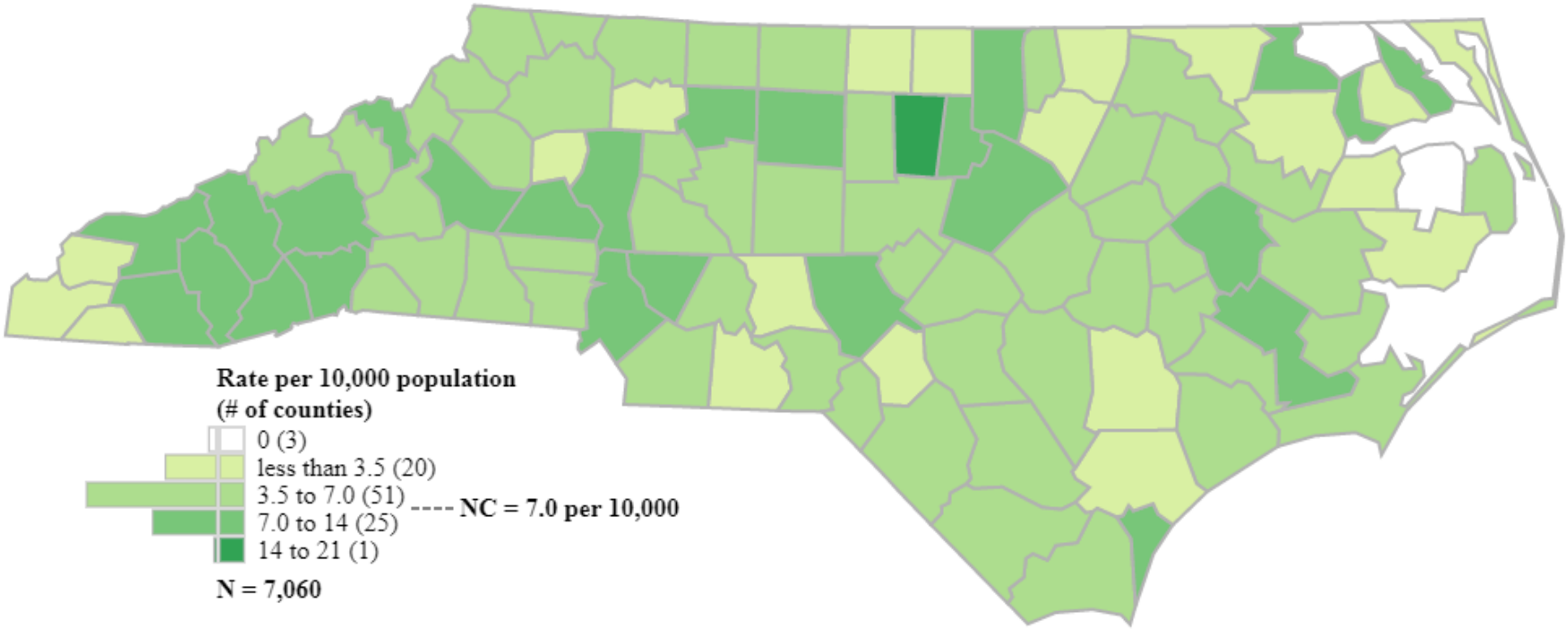
Notes: Figures include active, instate, nonfederal, non-resident-in-training physicians licensed as of October 31st of the respective year. North Carolina population data are smoothed figures based on 1980, 1990, 2000 and 2010 Censuses. Persistent HPSAs are those designated as HPSAs by HRSA in the Area Health Resource File using most recent 7 HPSA designations (2008-2013, 2015). **Sources:** North Carolina Health Professions Data System, 1980 to 2015; North Carolina Office of State Planning; North Carolina State Data Center, Office of State Budget and Management; Area Health Resource File, HRSA, Department of Health and Human Services.

The questions we need to be asking:

Where are there shortages?

How does this affect care delivery?

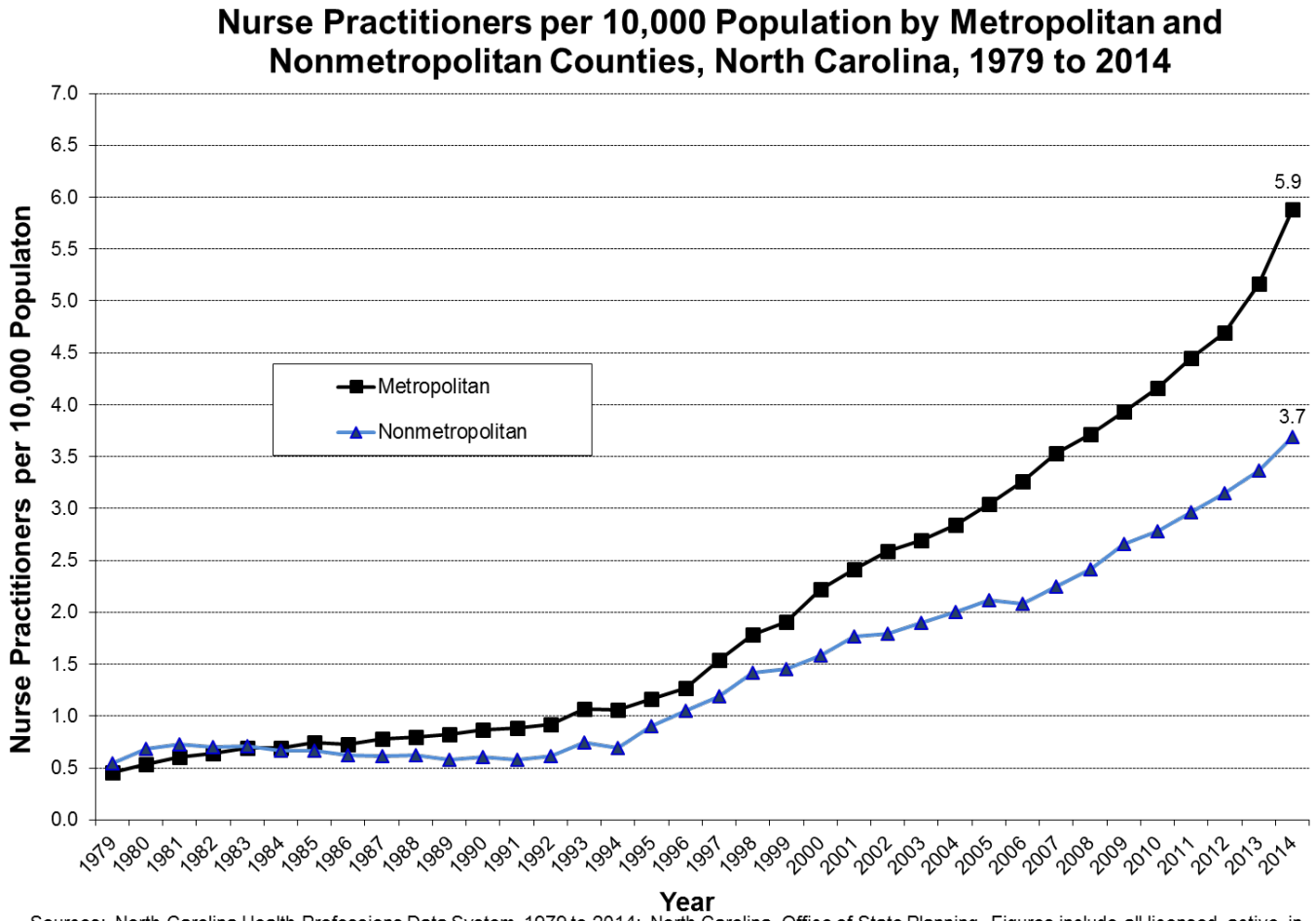
20 counties have comparatively few primary care physicians; 3 counties have none



Notes: Data include active, licensed physicians in practice in North Carolina as of October 31 of each year who are not residents-in-training and are not employed by the Federal government. Physician data are derived from the North Carolina Board of Medicine. County estimates are based on primary practice location. Population census data and estimates are downloaded from the North Carolina Office of State Budget and Management via NC LINC and are based on US Census data. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Created October 05, 2017 at https://hpds.sirsdemo.unc.edu/.

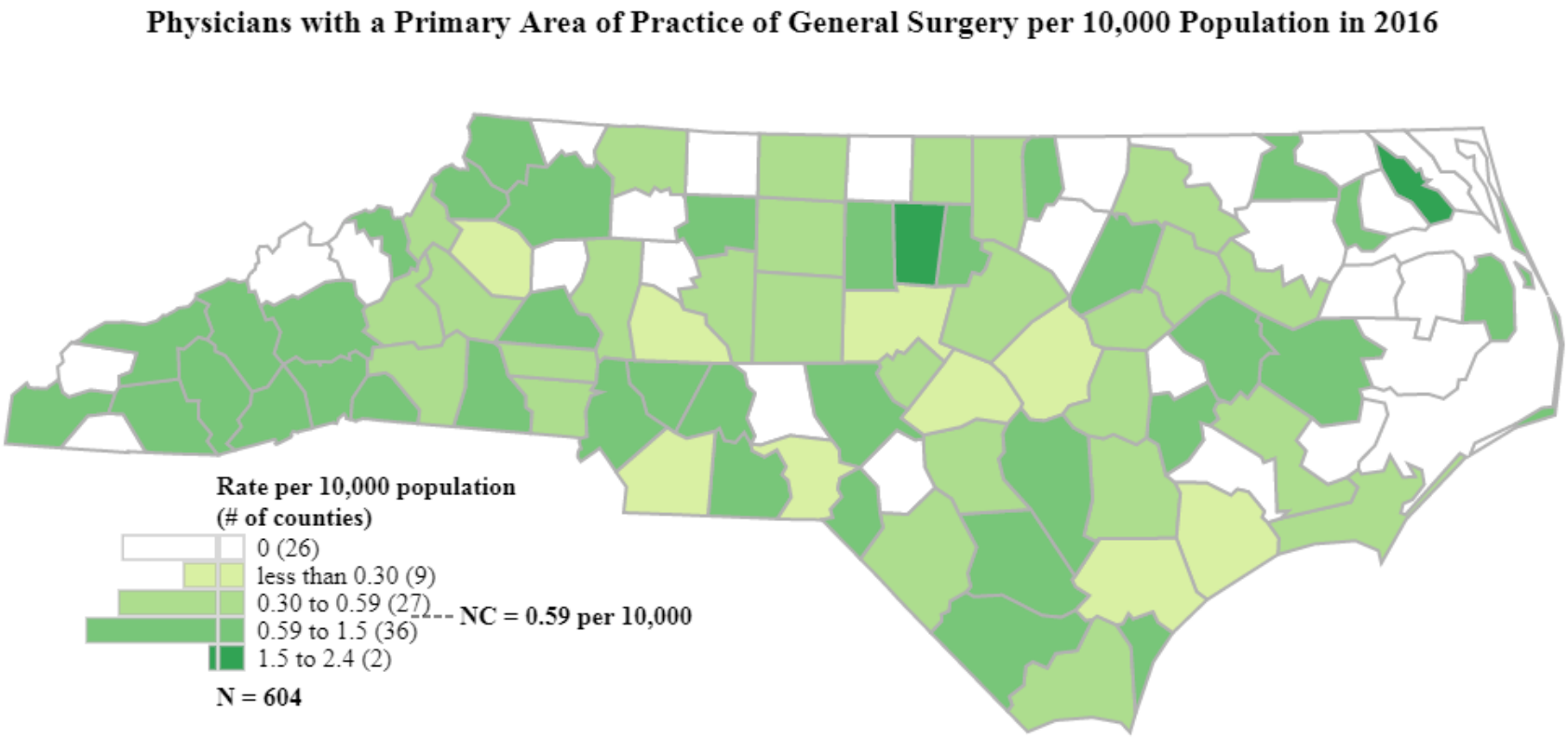
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Are NPs and PAs the answer? Maybe not. There is a widening gap between NP supply in rural and urban counties



Sources: North Carolina Health Professions Data System, 1979 to 2014; North Carolina Office of State Planning. Figures include all licensed, active, in-state nurse practitioners as of October 31 of each year. 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, 2015.

Lots of discussion about primary care but 26 NC counties have no general surgeon

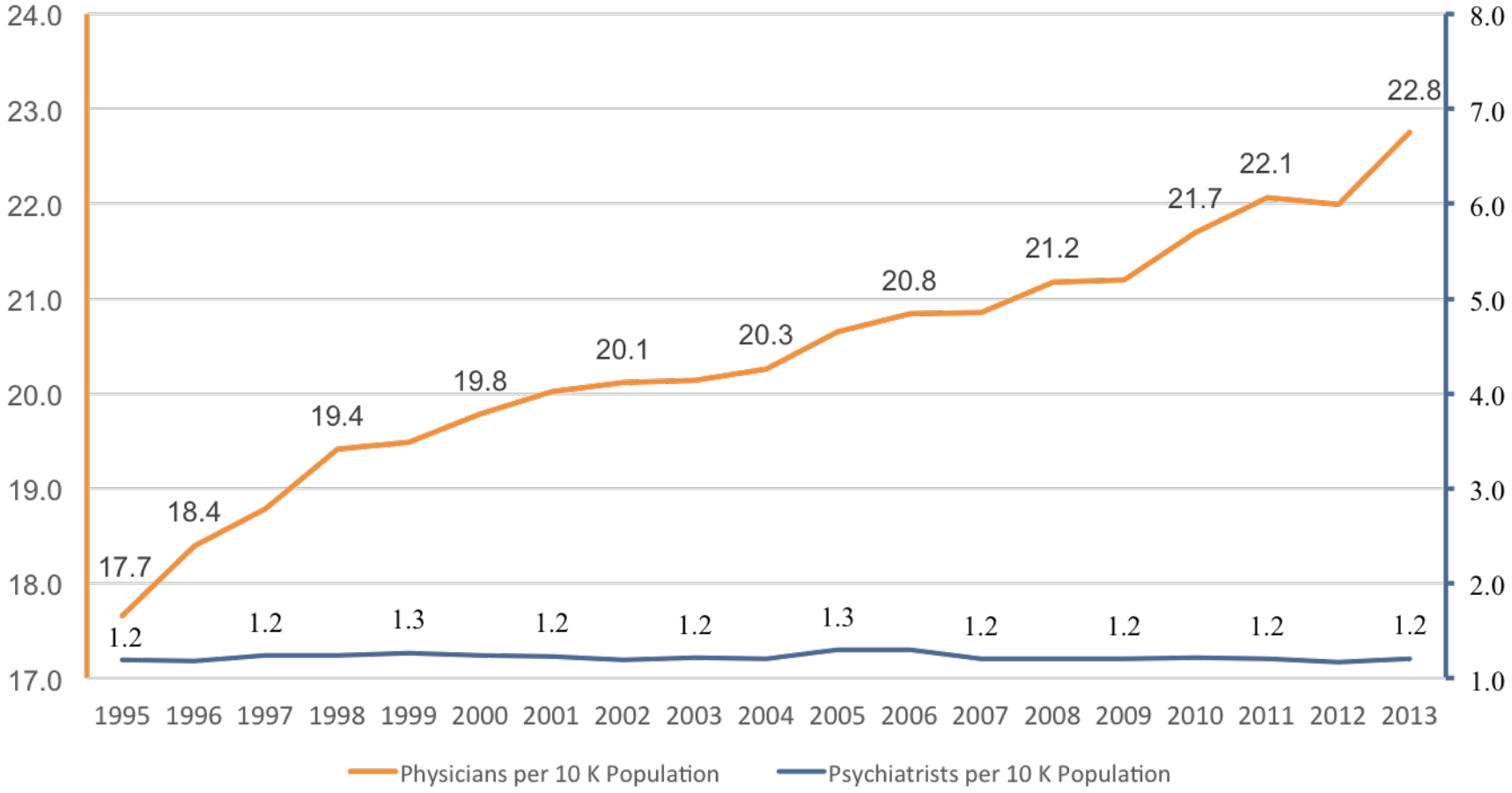


Notes: Data include active, licensed physicians in practice in North Carolina as of October 31 of each year who are not residents-in-training and are not employed by the Federal government. Physician data are derived from the North Carolina Board of Medicine. County estimates are based on primary practice location. Population census data and estimates are downloaded from the North Carolina Office of State Budget and Management via NC LINC and are based on US Census data. Source: North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Created October 05, 2017 at https://hpds.sirsdemo.unc.edu/.

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Why doesn't anyone want to become a psychiatrist?

Physicians and Psychiatrists per 10,000 Population, North Carolina, 1995-2013

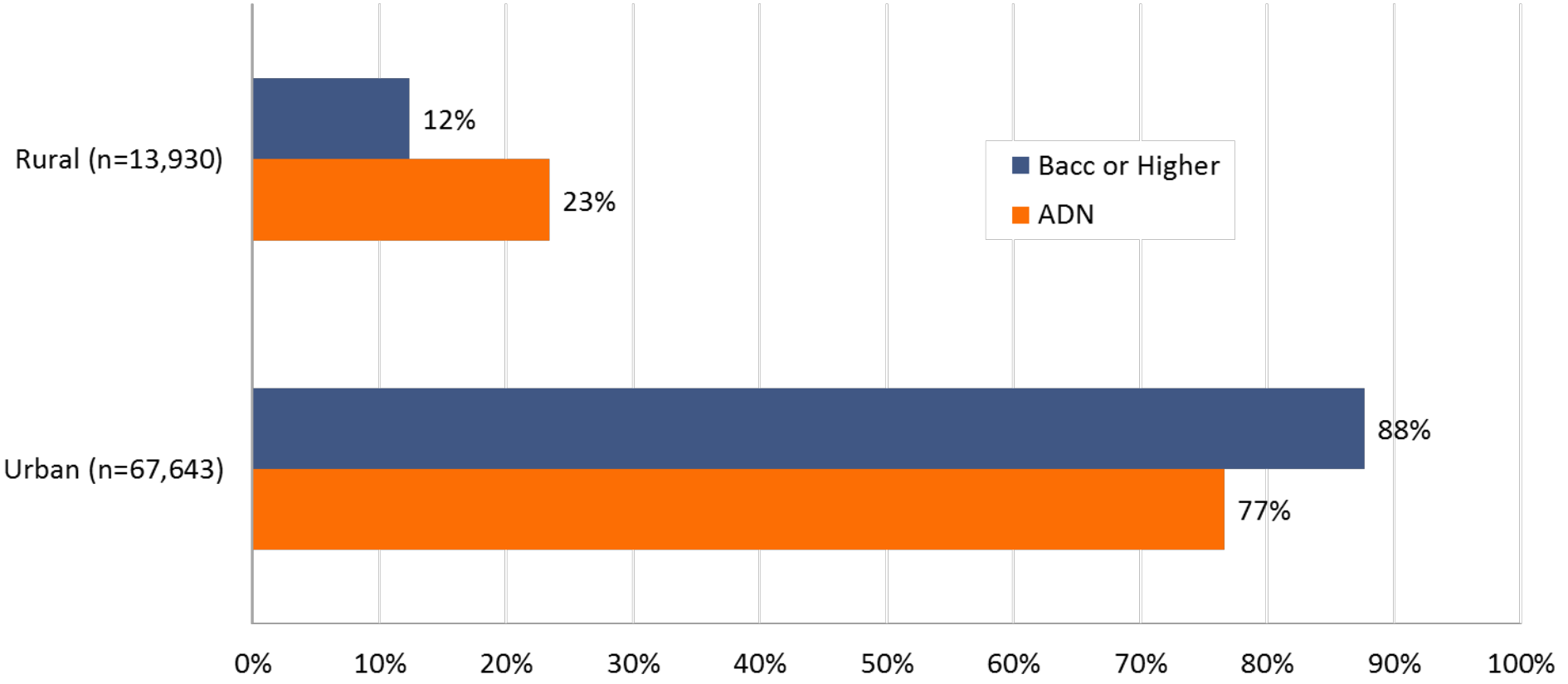


Data from HPDS Data System at Cecil G. Sheps Center, University of North Carolina at Chapel Hill

Nursing Education

In NC, ADN nurses nearly twice as likely to work in rural counties

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

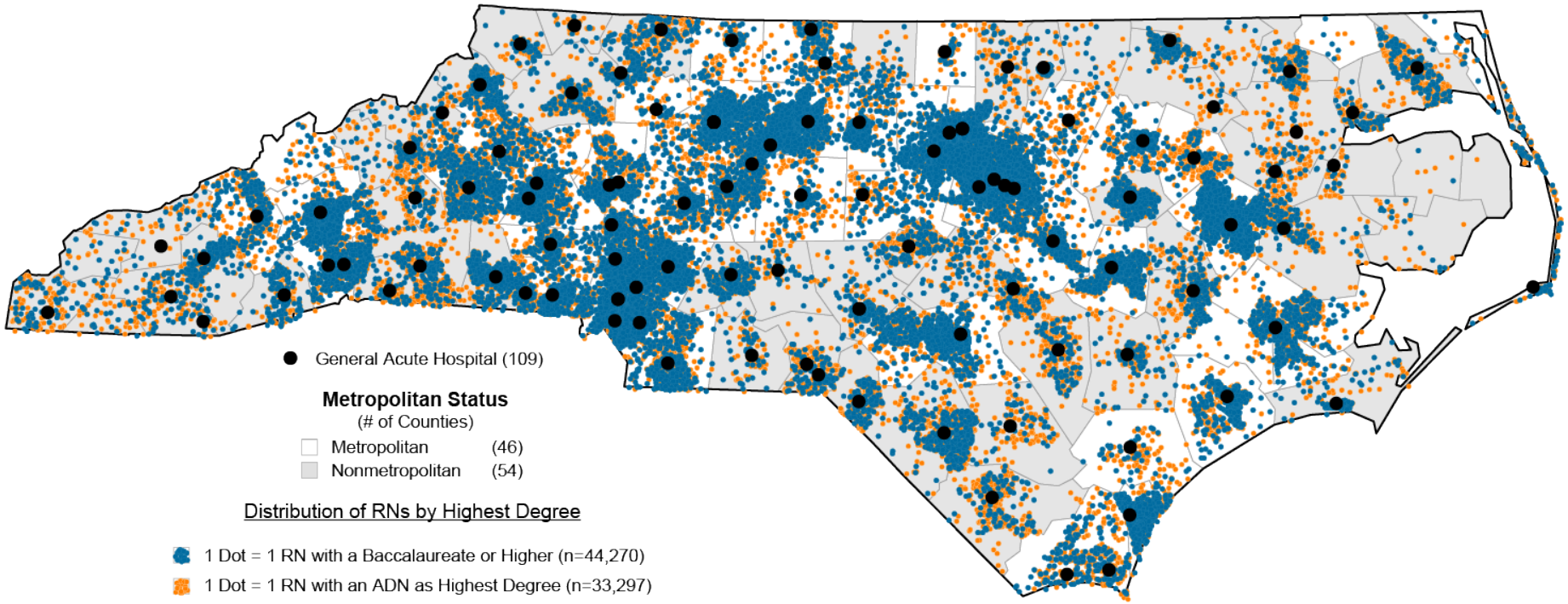


Rural source: US Census Bureau and Office of Management and Budget, March 2013. "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs.

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.

ADNs are better distributed across state while baccalaureate+ nurses cluster around hospitals

Distribution of ADNs and Baccalaureate or Higher RNs Actively Practicing in North Carolina in 2012



Note: Dots are scattered randomly within ZIP code areas. Data include RNs who were actively practicing in North Carolina who have an ADN as their highest degree or who have a BSN or higher as their highest degree. Data exclude 377 RNs with inadequate zip codes for mapping purposes.
Source: North Carolina Health Professions Data System, with data derived from the North Carolina Board of Nursing, 2012. Hospital locations derived from NC DHHS as of January 1, 2015 at http://www.ncdhhs.gov/dhsr/data/hllist.pdf and NCHA member hospital list at https://www.ncha.org/about/member-hospitals, retrieved 1/7/14.
Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

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.

Do mobility nurses behave more like ADNs or baccalaureate+ nurses? It depends

After seeking additional education, mobility nurses behave:

More like BSN+ nurses in terms of specialty and setting

- Less likely to practice in home care, hospice, long-term care and geriatrics

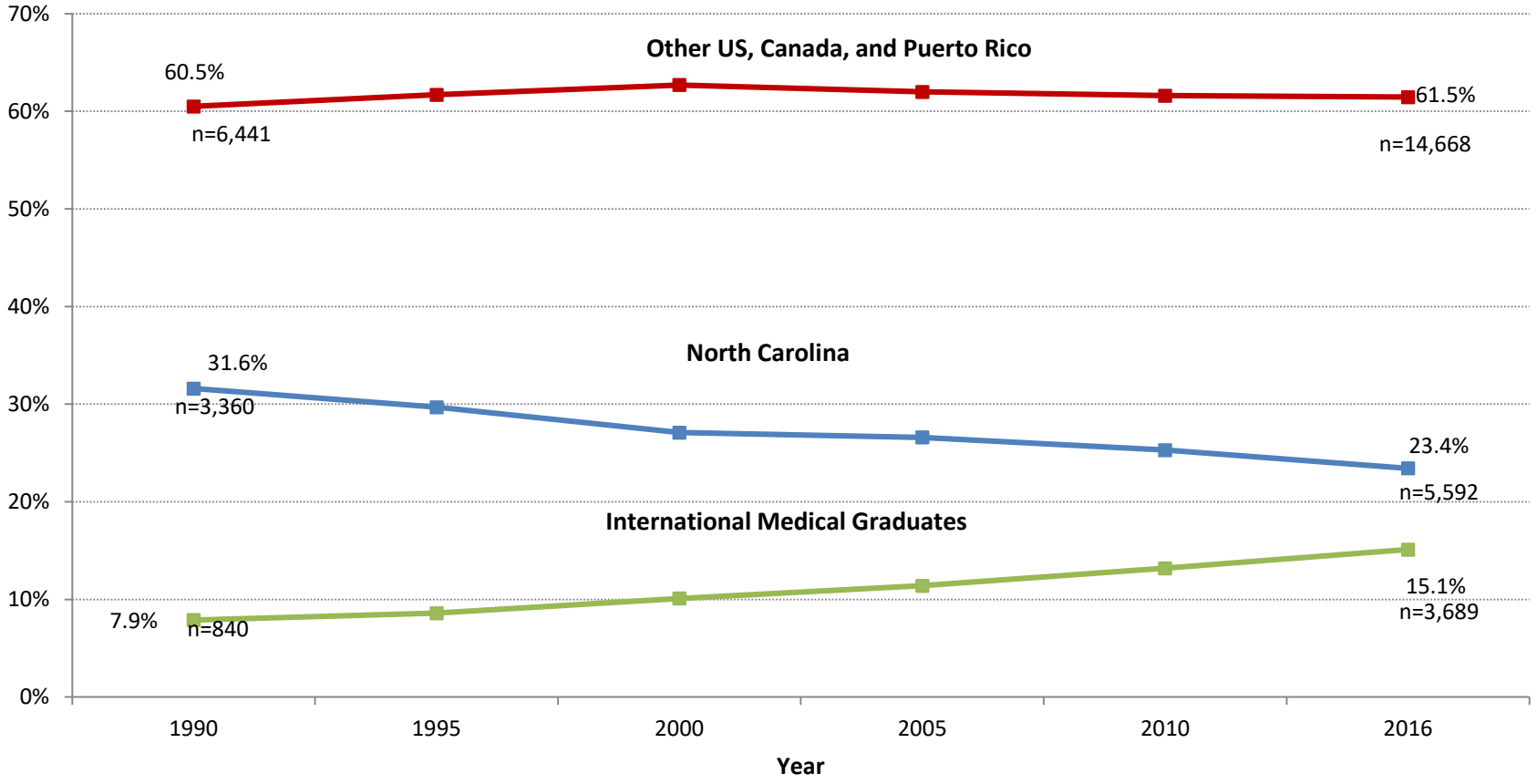
More like ADN nurses in terms of geographic dispersion.
Compared to BSN entry nurses:

- Twice as likely to practice in rural
- Three times more likely to practice in NC's Tier 1 counties

Medical School

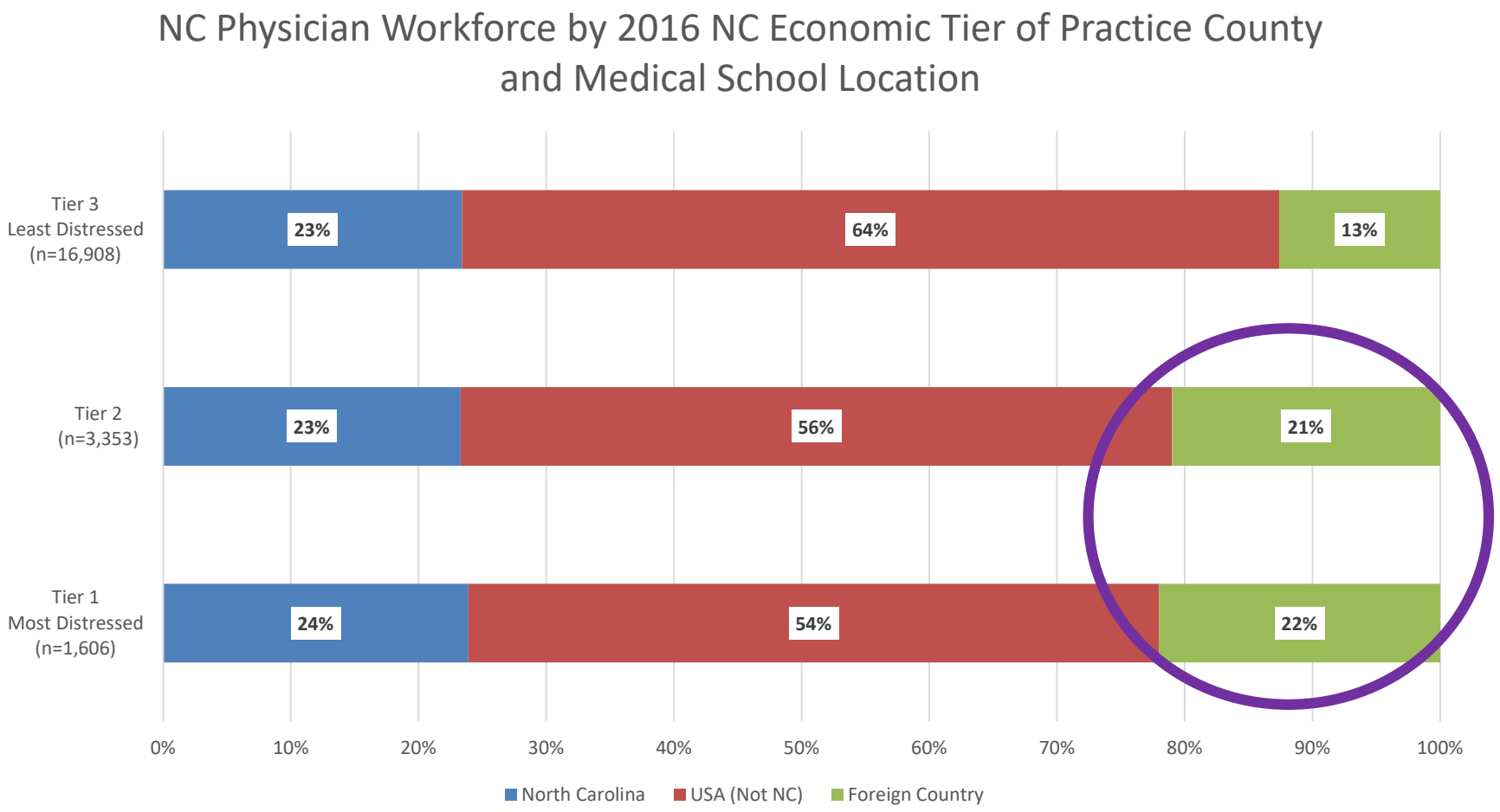
Most of North Carolina's physicians completed medical school outside NC

Active Licensed North Carolina Physicians by Medical School Location, 1990-2016

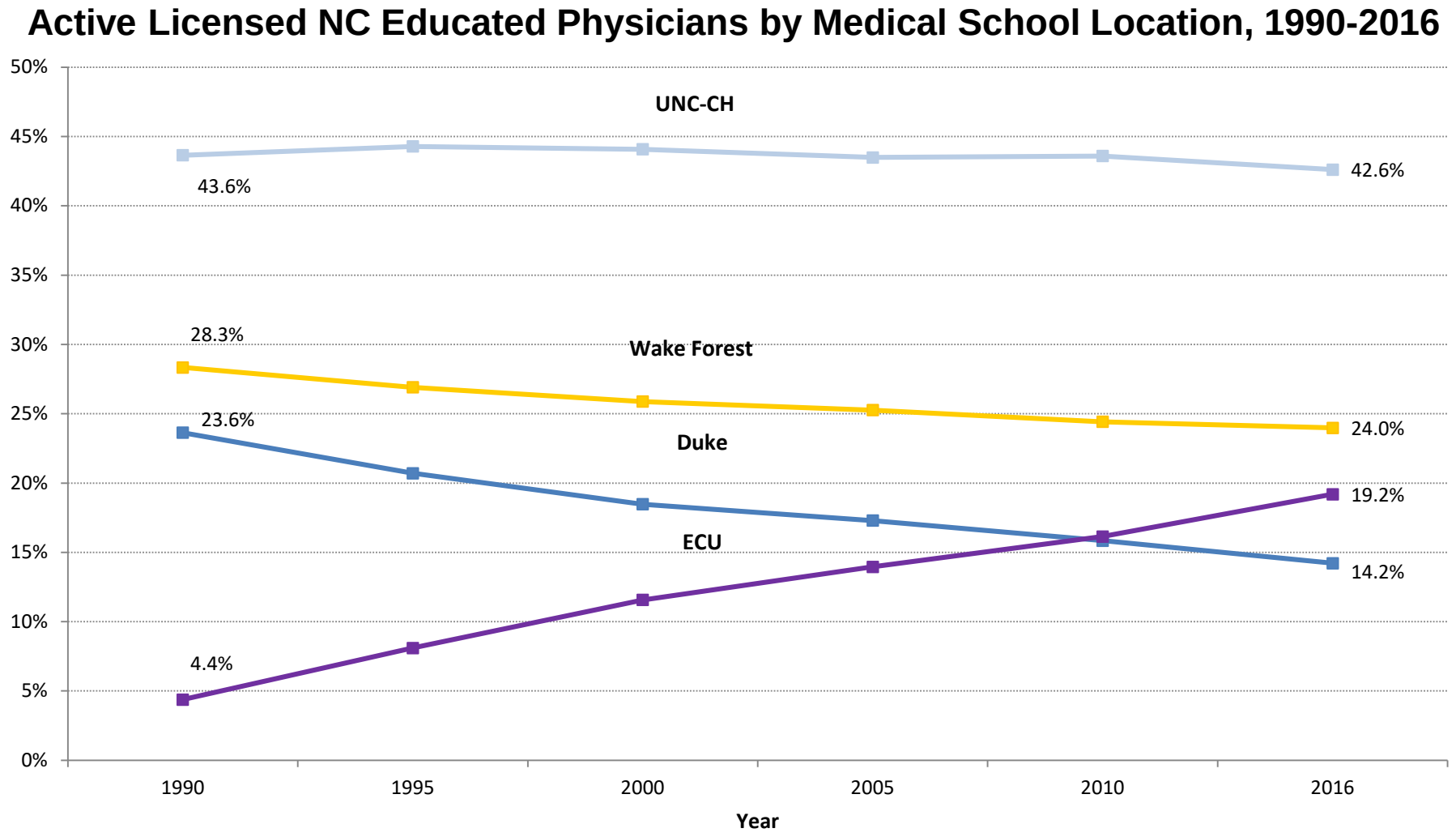


Sources: North Carolina Health Professions Data System with data derived from the North Carolina Medical Board, 1990 to 2016;
Figures include all licensed, active, instate, non-federal, non-resident-in-training physicians.

International Medical Graduates are a higher percentage of the workforce in economically distressed counties



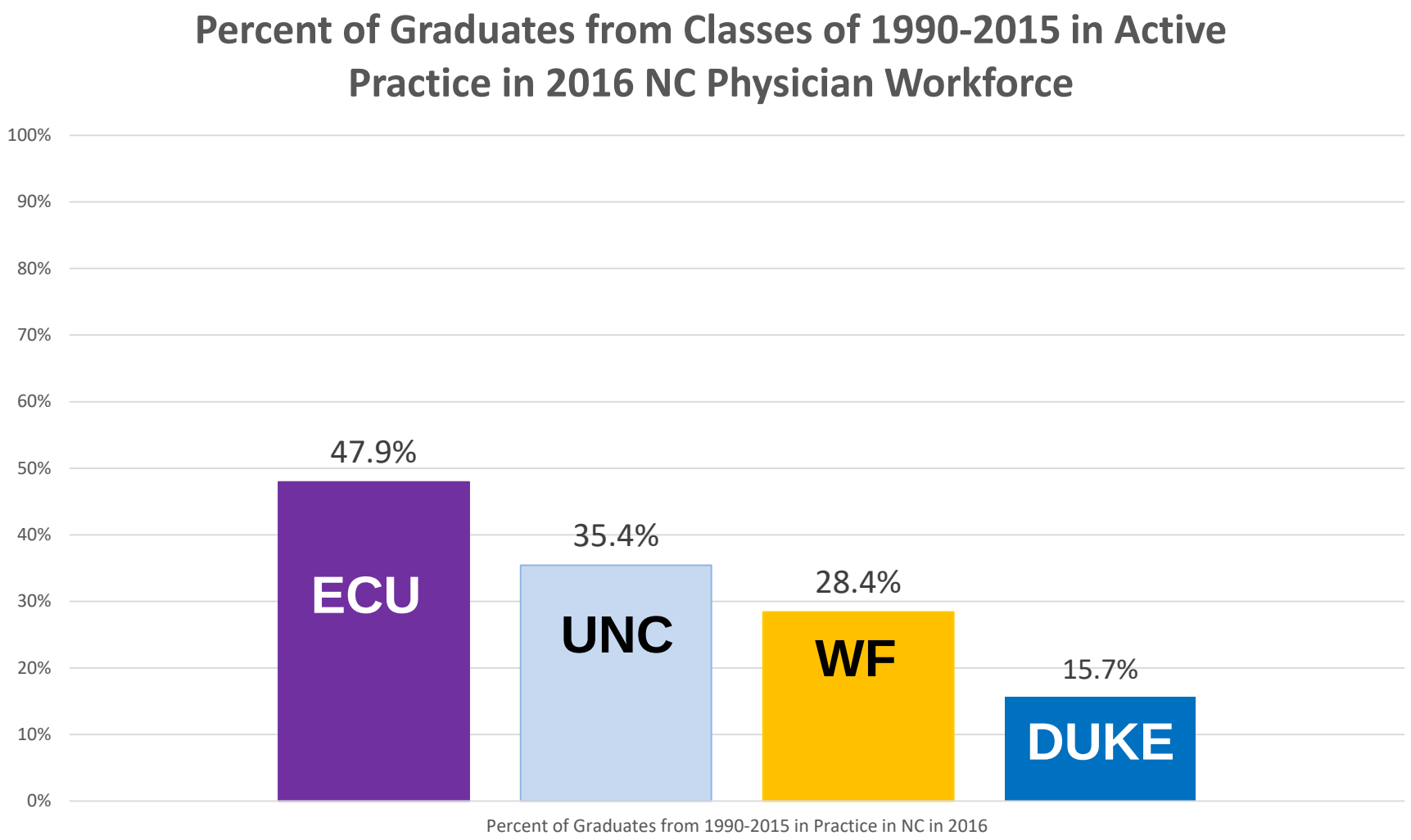
Of NC educated physicians, largest proportion went to UNC-CH but ECU is on the rise



Sources: North Carolina Health Professions Data System with data derived from the North Carolina Medical Board, 1990 to 2016;
Figures include all licensed, active, instate, non-federal, non-resident-in-training physicians.

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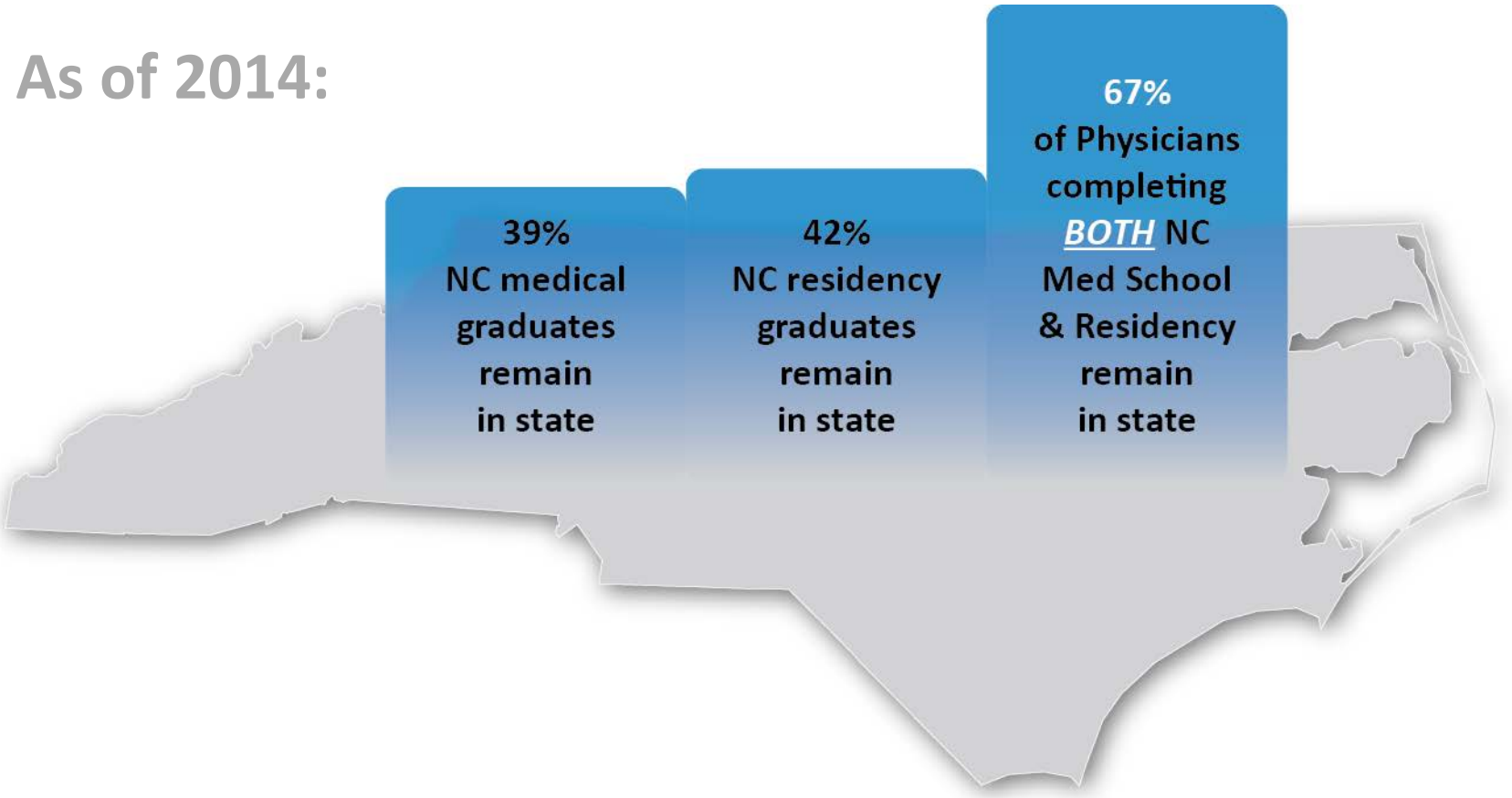
More public medical school grads practice in state



Graduate Medical Education

Retention much higher for physicians completing both UME and GME instate

As of 2014:



Source: AAMC 2015 State Data Book, with data derived from the 2014 AMA Physician Masterfile.

Completing an AHEC residency increases in-state retention



- **50% (n=1,420) of physicians who complete an NC AHEC residency stay in North Carolina to practice**



compared to

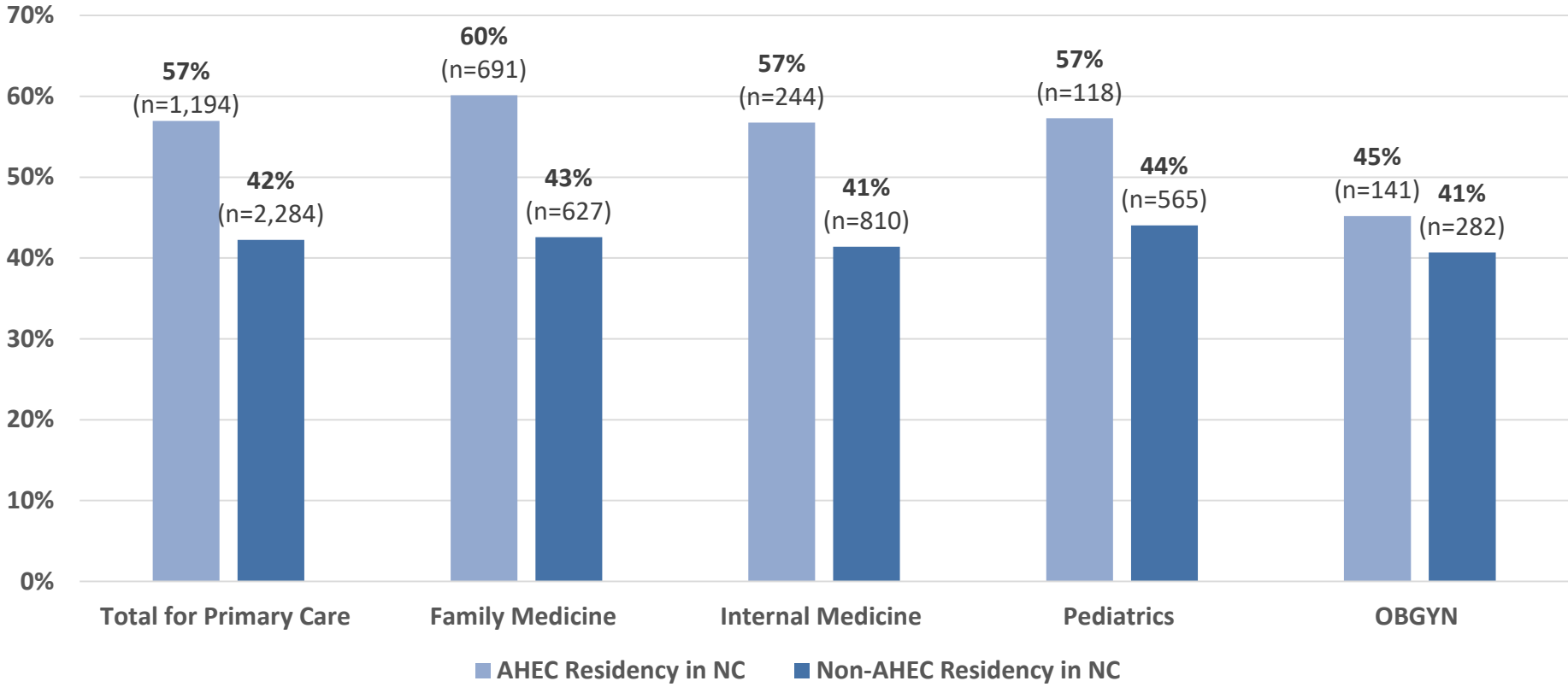
- **38% (n=5,879) of physicians who complete a non-AHEC residency stay in North Carolina to practice**

AHEC **Non-AHEC**

Source: NC Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the American Medical Association Masterfile, 2013. "Active" includes federal, as well as non-patient care activities such as teaching, research, administration, etc.

Retention rates are even higher for residents who complete primary care AHEC residencies

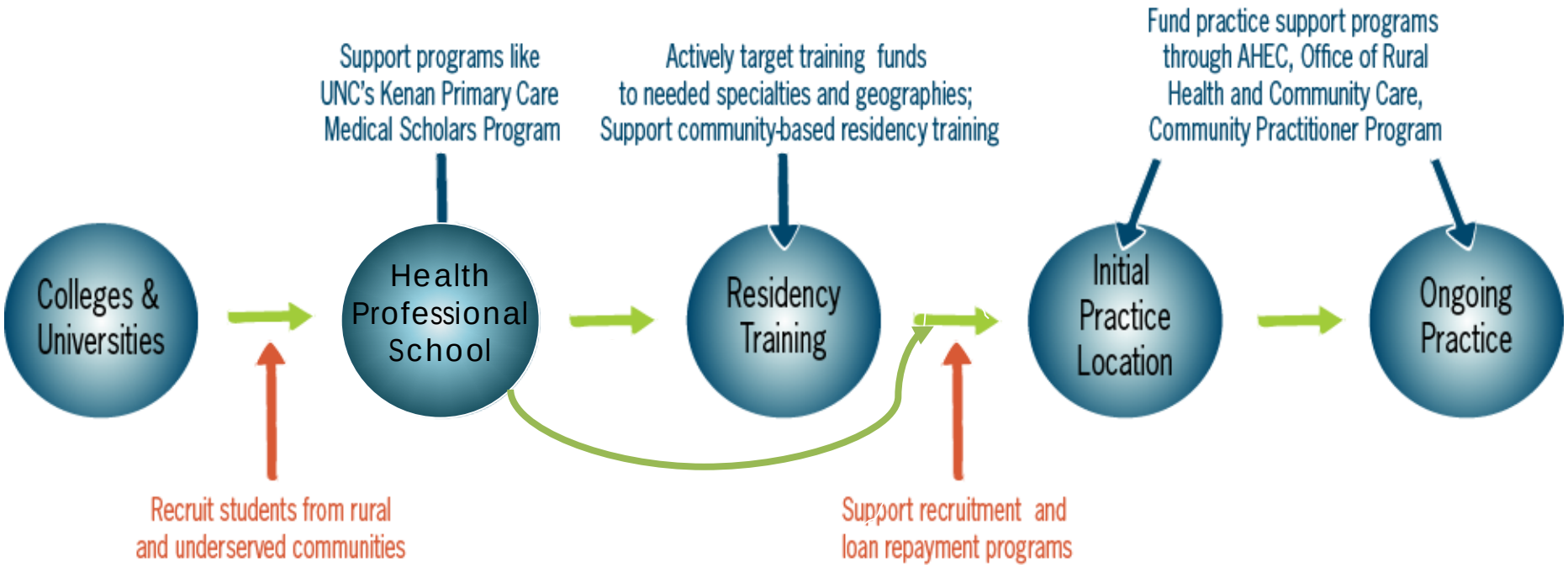
Primary Care Physicians Practicing in NC who Completed an NC Residency, AHEC vs. Non-AHEC Residency, 2013



Source: NC Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the American Medical Association Masterfile, 2013. "Active" includes federal, as well as non-patient care activities such as teaching, research, administration, etc.

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Many points where can intervene to promote distribution of workforce to meet NC's population health needs



Big picture health system change: *What does it mean for the workforce?*

Looking to the future…





- Cost pressures are driving change *with* or *without* health reform
- New models of care aim to lower costs, enhance quality, improve population health and lower provider burnout

Some Predictions

- Health care jobs will continue to grow rapidly
  - Supply will grow but workforce will still be maldistributed
- Changing care delivery and payment models are/will:
  - Shift care and workforce from inpatient to community settings
  - Generate new professions and roles
- Career ladders are needed

Boundary spanning roles are growing quickly

"Boundary spanning" roles reflect shift from visit-based to population-based strategies

Two examples:

Panel Managers	Health Coaches
Assume responsibility for patients between visits. Use EHRs and patient registries to identify and contact patients with unmet care needs. Often medical assistants but can be nurses or other staff	Improve patient knowledge about disease or medication and promote healthy behaviors. May be medical assistants, nurses, health educators, social workers, community health workers, pharmacists or other staff

It's complicated

- New roles may be filled by existing staff or new hires
- Some roles have similar functions but different titles—**care managers** and **case managers**
- Other roles have different functions but same name—**patient navigators**
- Depending on setting and patient population, roles are often filled by different types of **providers—medical assistants, social workers, nurses, etc**.

Questions?

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