

The Nursing Workforce in North Carolina: Challenges and Opportunities

Erin Fraher, PhD MPP

With Erica Richman, PhD and Katie Gaul, MA

Program on Health Workforce Research & Policy

Cecil G. Sheps Center for Health Services Research, UNC-CH

Future of Community College Nursing Education Meeting

North Carolina Community College System

January 8, 2015



UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Presentation Overview

Part 1

- The NC Health Professions Data System: who are we and why should you trust our data?
- Do we (will we) have a nursing shortage in North Carolina?
- The current nursing workforce—how do ADN nurses differ from nurses with a baccalaureate degree or higher?

LUNCH

Part 2

- The future nursing workforce in a transformed health system
- What can we do now to prepare for the future nursing workforce?

In case your office calls, here's the presentation in one slide

- The nursing workforce is critical to transforming our health care system
- The practice and geographic characteristics of ADN nurses differ significantly from nurses with a baccalaureate degree or higher. We need to be aware of these differences as we plan for the future.
- Health system transformation is going to have profound effect on the nursing workforce
- We need to retool:
 - the existing workforce
 - our education, regulatory and payment systems

Who we are: 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
- Collaboration between Sheps Center, the health professions licensing boards and the NC AHEC
- Our data and analyses are independent of government and health care professionals
- Independence brings rigor and objectivity

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

- 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**



All good academics declare their hypotheses up front. Here's mine:
The nursing workforce is pivotal to health system transformation



UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Why the nursing workforce is critical to health system transformation

- With over 97,000 nurses in active practice, nursing is **by far** largest licensed health profession (4x as many nurses as physicians)
- Nursing care related to key quality and satisfaction measures that will increasingly be tied to value-based payments
- Nurses provide holistic care across health and community based settings
- Generalist education make nurses the perfect “stem cell” providers to take on new roles and new functions in transformed health system

**But will we have enough
nurses in the future?**



I believe we have, and will have, enough nurses in the future

- A “shortage narrative” exists—based on belief that growing, aging population with increasing chronic disease and expanded health insurance coverage will demand more care than can be provided by workforce
- Federal nursing projections produced by the Health Resources and Services Administration (HRSA) last month suggest:
 - an oversupply of nurses nationally
 - a shortage of 12,900 nurses in North Carolina
- I’m not convinced. Are you?
- Let’s unpack the projections



Federal projections use American Community Survey (ACS) data. We have better data

Starting supply –

HRSA model shows 95,800 nurses in 2012 in NC

Licensure data show 97,222 in active practice in the state in 2012

➤ **HRSA model underestimates baseline supply by 1,422 nurses**

Projecting Future Growth –

HRSA model estimates average annual supply growth rate of 0.9%.

Licensure data show for past 10 years, average growth rate has been between 1.8-3.5%

How did HRSA estimate annual growth rate?

- HRSA model used first time takers of NCLEX in 2012 as proxy for new entrants. Holds new entrants constant at 3,837 out to 2025
 - According to licensure data, there were 4,013 new entrants to workforce in 2012
 - NC is one of fastest growing states in country. HRSA model did not allow for migration.
- **HRSA model likely underestimates annual supply growth**

Models are sensitive to assumptions about nurses' behavior

HRSA model assumes:

- Increasing probability of retirement between 50-75, all nurses retire at 75
- Supply=demand in 2012, yet many would argue NC was already in state of over supply in 2012.

Why are these assumptions important?

- Before equilibrium assumption, HRSA model showed NC demand for nurses in 2012 was 89,200 and available supply was 95,800
- **This is an oversupply of 6,600 nurses (7% of total workforce) at baseline that would have carried forward in model**
- No adjustment for generational effects yet we know nurses in more recent generations are retiring later (Auerbach et al 2014).
- **Later retirements mean larger workforce supply**

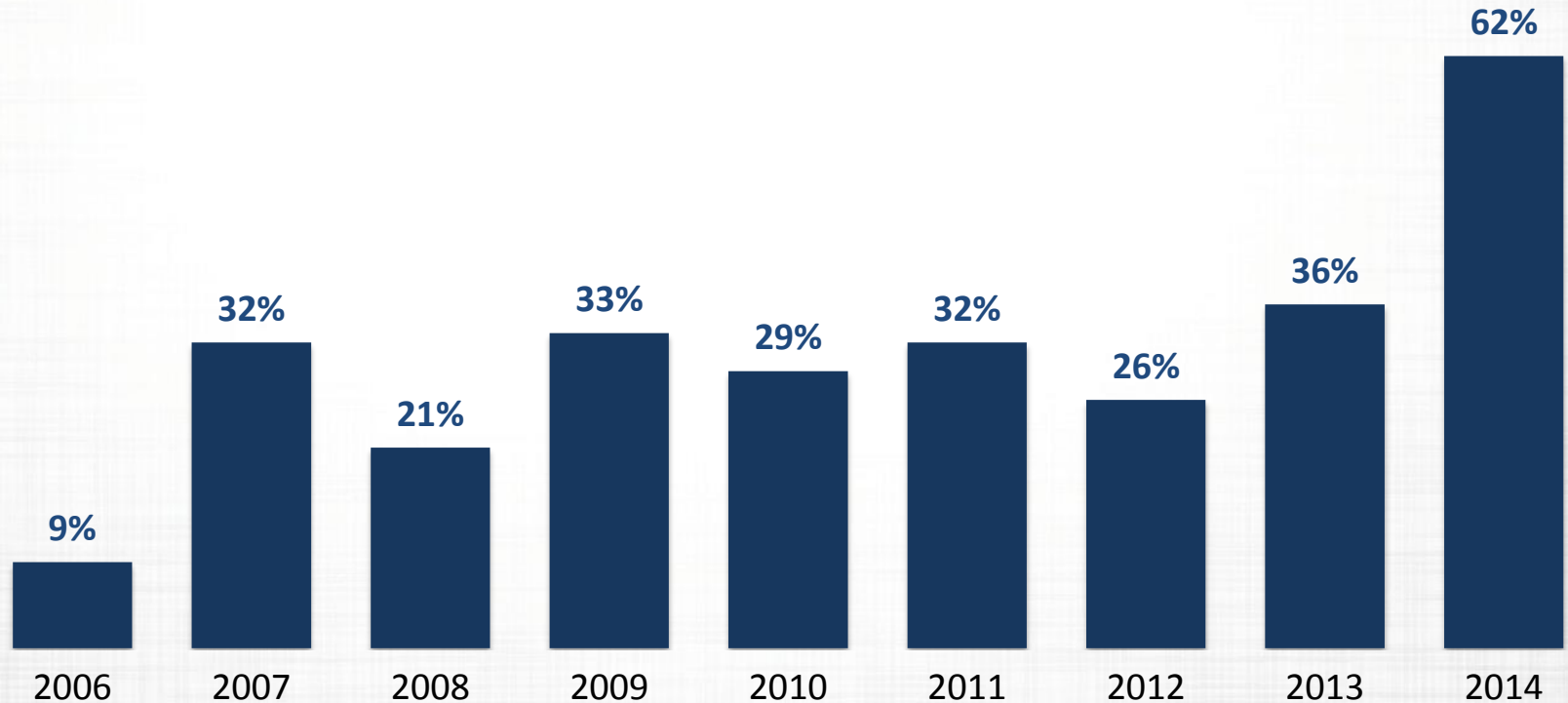
The other side of the modeling equation...

the HRSA demand side model

- On the demand side, national health care use and delivery patterns were applied to North Carolina
- Model converts demand for services (e.g., visits) into demand for providers (e.g., FTEs) using staffing ratios
- Model assumes staffing ratios will remain constant to 2025
- **Model doesn't account for new models of care and the shift of care (and the workforce!) to outpatient settings**

% of NC Hospitals Reducing Payroll Expenses

Most Hospitals Are Reducing Payroll *Trend across Jan-Mar Quarters*



Source: NCHA ANDI, June 2014

Percent of hospitals with declining payroll compared with Jan-Mar quarter of previous year. Excludes contract labor. Expenses not adjusted for inflation.

■ % Hospitals Cutting Payroll Expenses



Modeling is complicated.

Key takeaways

- Thanks to the NC Board of Nursing, we have better data than the feds
- We do not face a nursing shortage now, nor are we likely to face one in the future
- Focusing on whether we have a nursing shortage distracts us from a more important question:

Will we have the right mix of nurses in the right locations, specialties and practice settings with the skills and competencies needed to meet NC's population health needs?



**The current workforce in
North Carolina: how do
ADN nurses differ from nurses
with a baccalaureate or higher?**

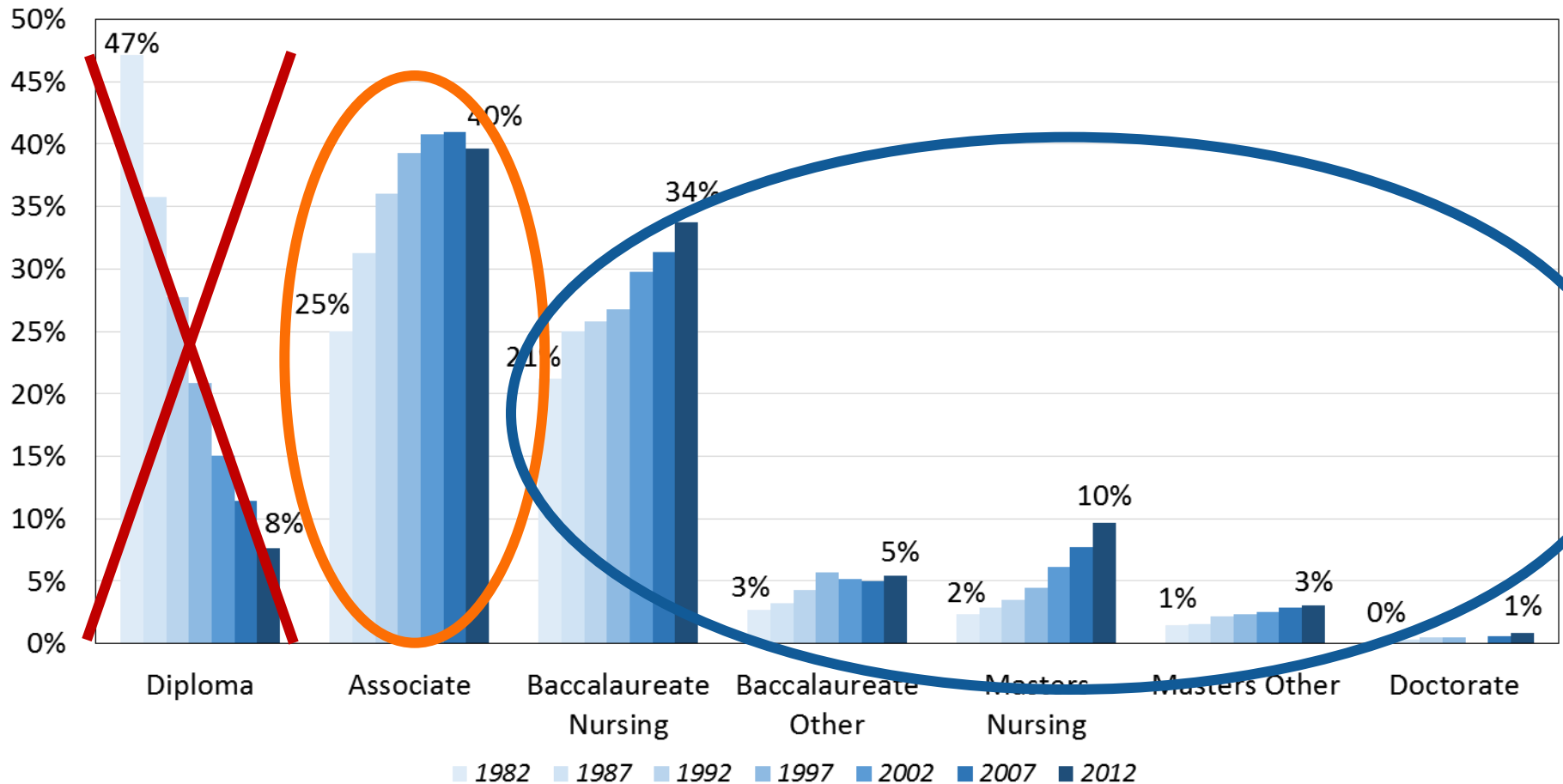


UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Highest Degree of North Carolina Nursing Workforce: 1982-2012

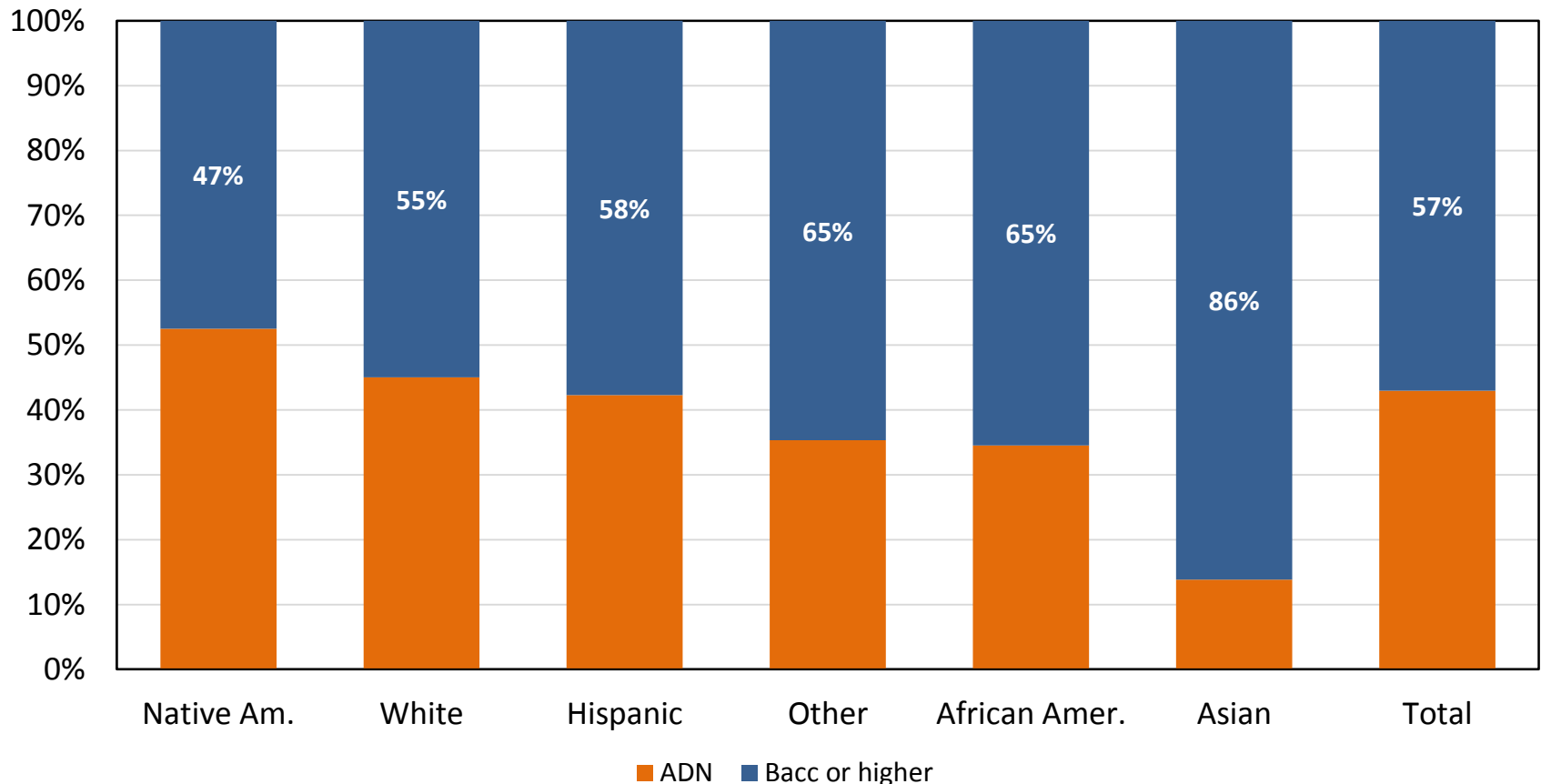
North Carolina Nursing Workforce by Highest Degree, 1982-2012



Note: Data include RNs who were actively practicing in North Carolina as of October 31 of the respective year. **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.

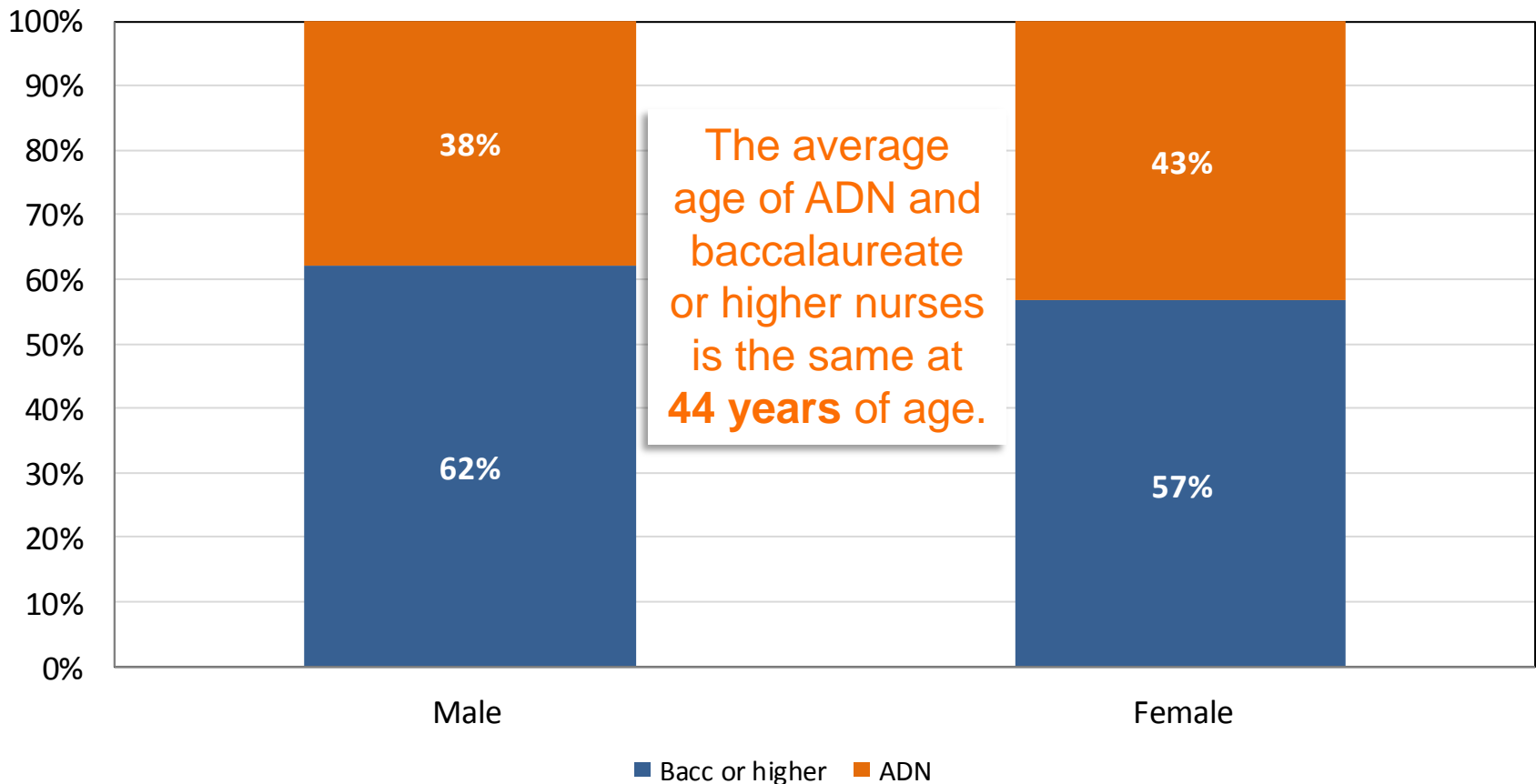
Asians, African Americans more likely to have baccalaureate or higher

North Carolina Nursing Workforce by Race/Ethnicity and Highest Degree, 2012



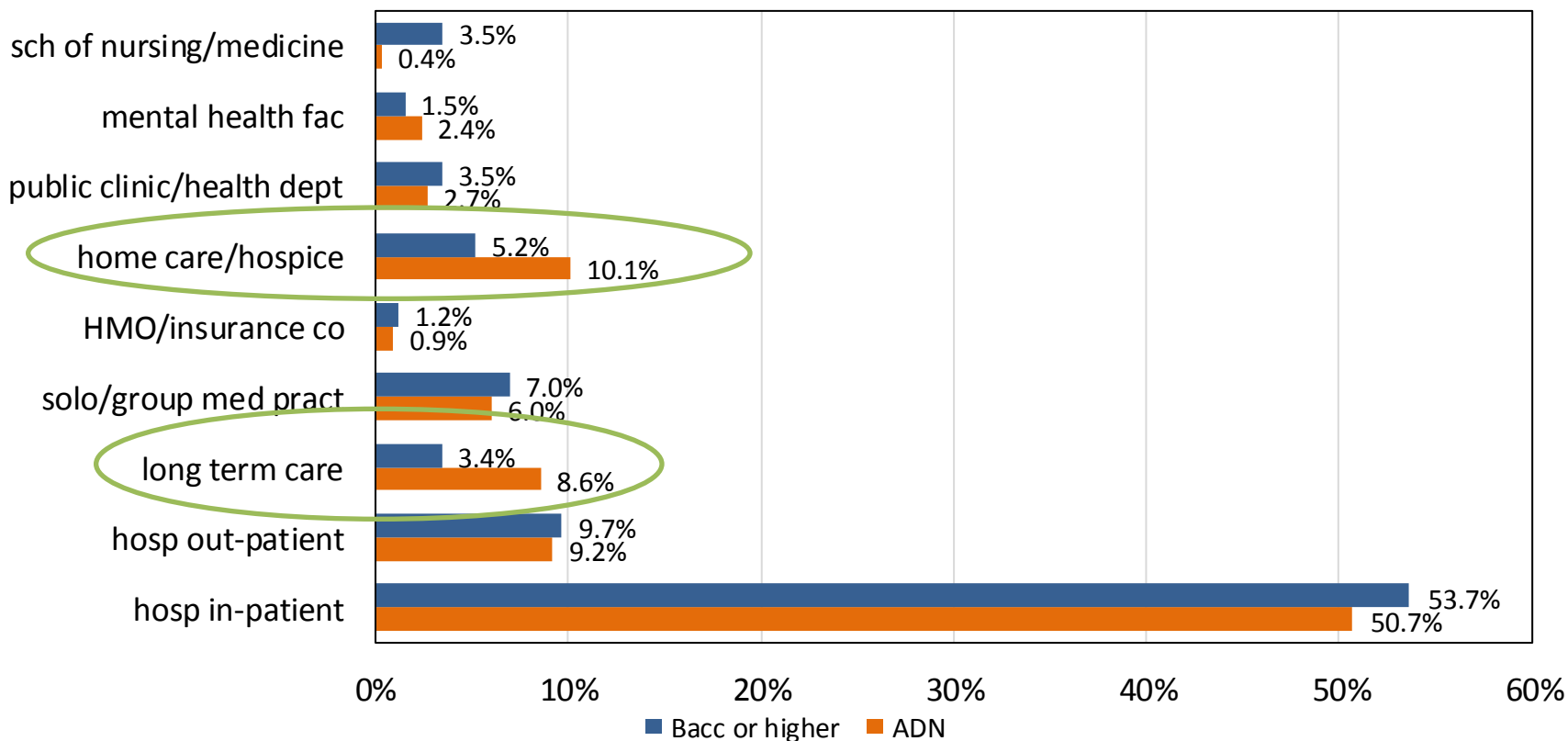
Male nurses more likely to have BSN

North Carolina Nursing Workforce by Race/Ethnicity and Highest Degree, 2012



Most nurses work in hospitals but ADN nurses more likely to work in home care/hospice and long-term care

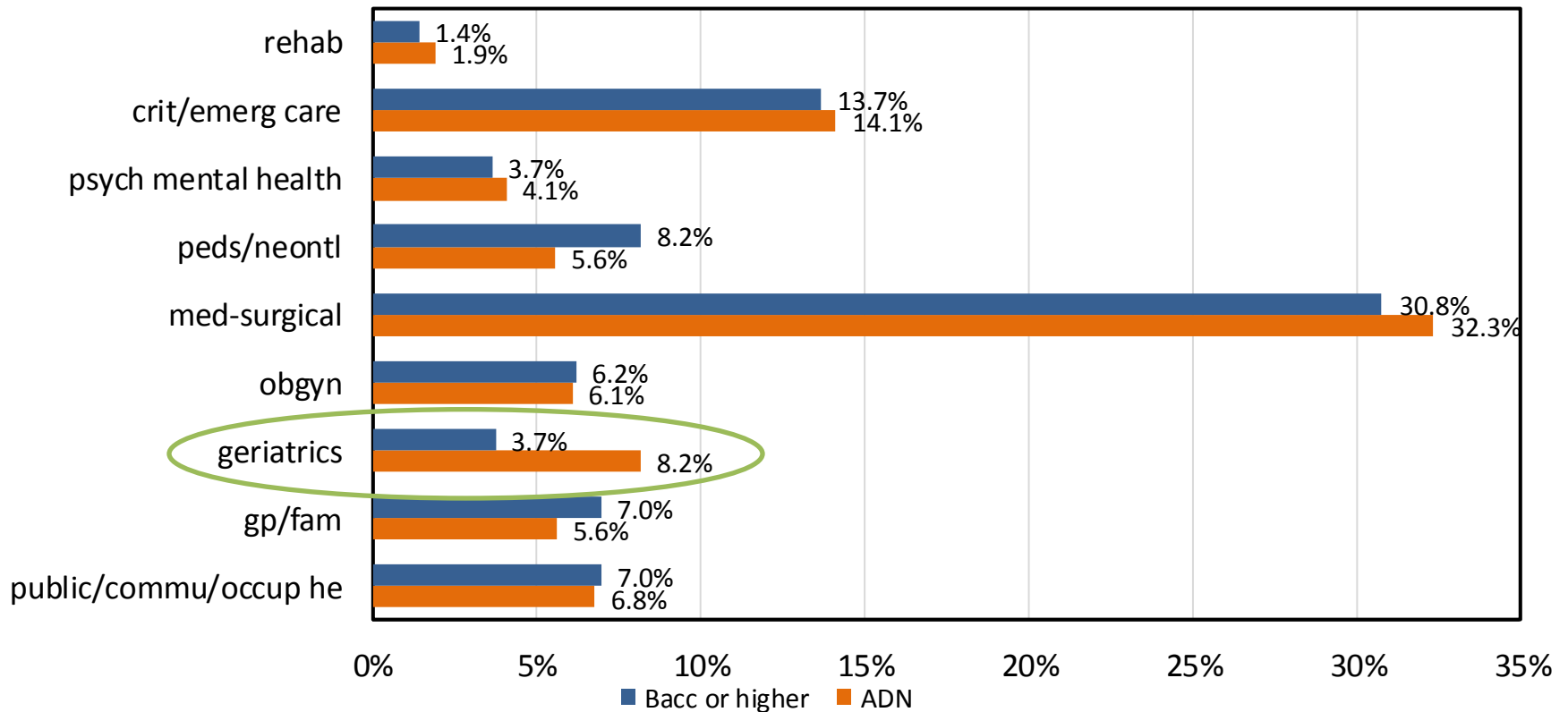
North Carolina Nursing Workforce by Employment Setting and Highest Degree, 2012



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.

Similar distributions by clinical practice area but ADN nurses more likely to work in geriatrics

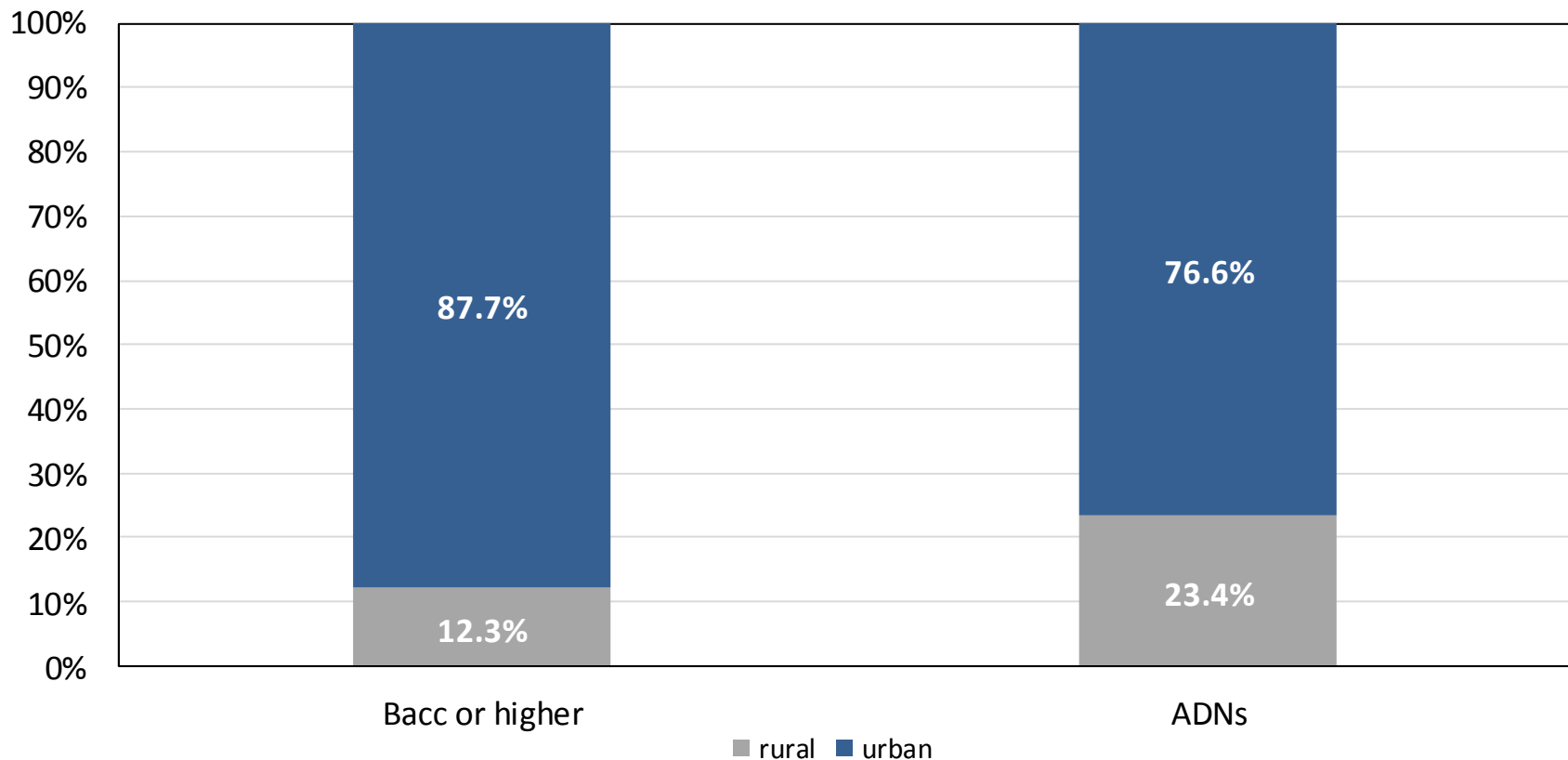
North Carolina Nursing Workforce by Clinical Practice Area and Highest Degree, 2012



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 twice as likely to work in rural counties

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



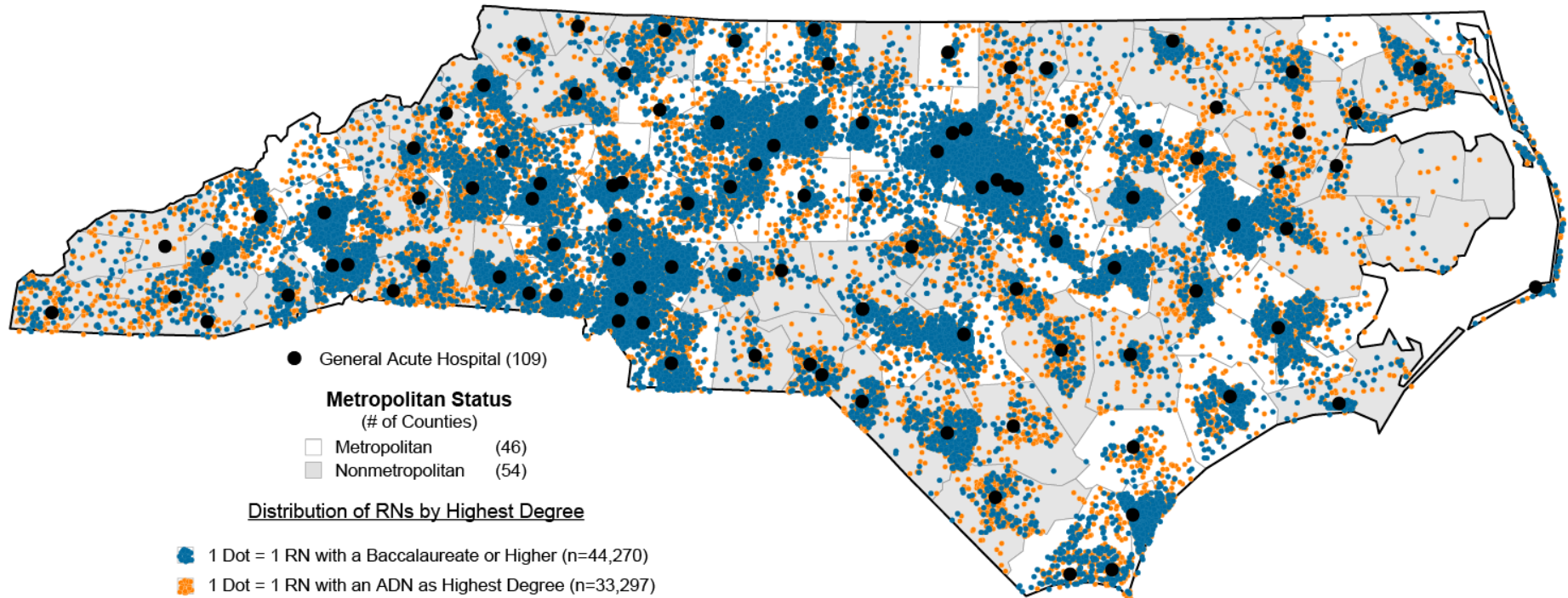
Rural source: US Census Bureau and Office of Management and Budget, March 2013. "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs.

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 and higher cluster more around hospitals

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



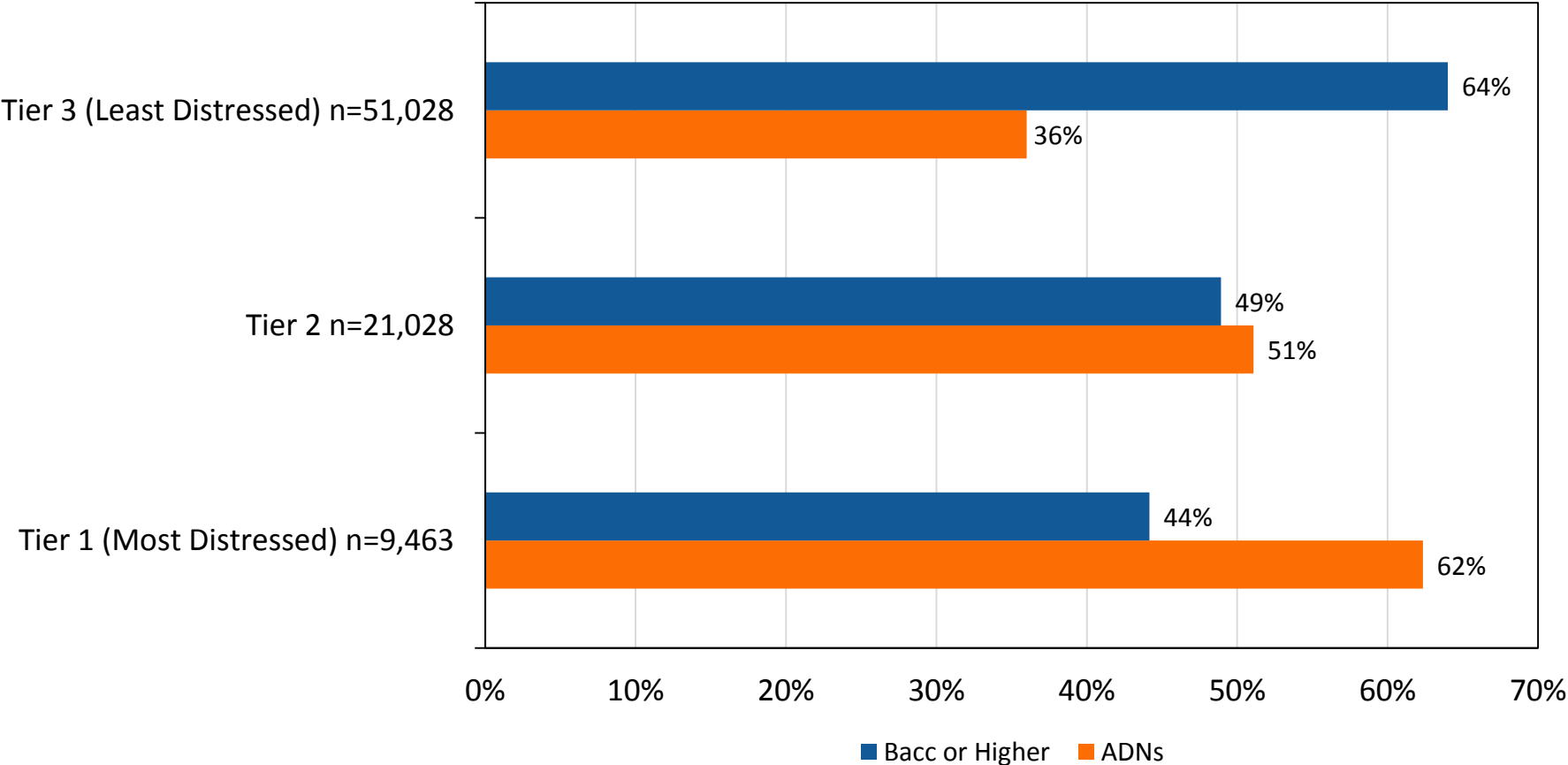
Note: Dots are scattered randomly within ZIP code areas. Data include RNs who were actively practicing in North Carolina who have an ADN as their highest degree or who have a BSN or higher as their highest degree. Data exclude 377 RNs with inadequate zip codes for mapping purposes.

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.

ADN nurses significantly more likely to work in most economically distressed (Tier 1) counties

North Carolina Nursing Workforce by Economic Tier and Highest Degree, 2012



Source for economic tiers: <http://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations>. Retrieved 5/12/14.

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.

Do nurses who entered the workforce with an ADN but have a baccalaureate or higher degree behave more like ADN or baccalaureate nurses?

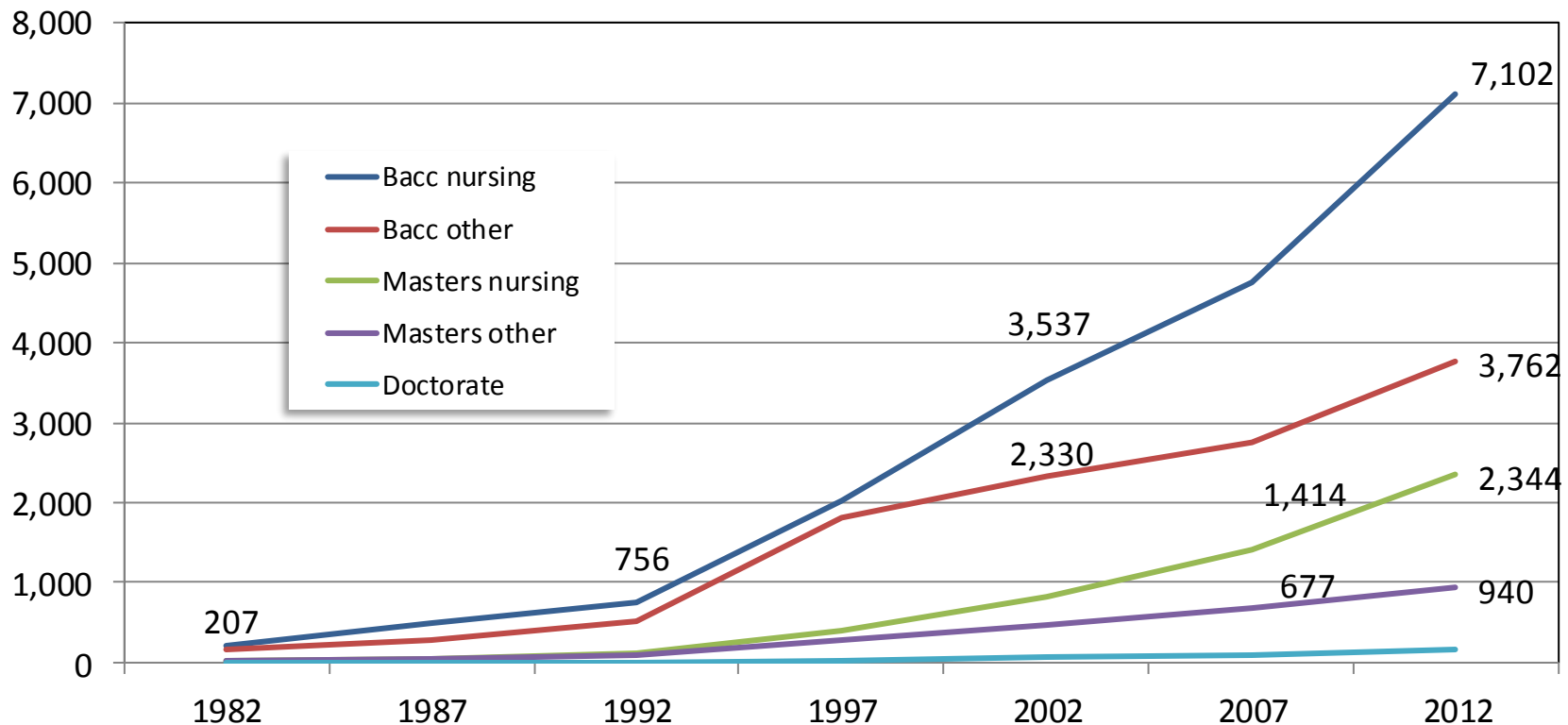


UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Number of nurses with ADN at entry with highest degree at baccalaureate or higher has increased dramatically

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



Evidence of education mobility or career mobility?

- In 2012, 14,300 nurses in the NC workforce had an ADN for entry degree but had baccalaureate + as highest degree
- This group is of interest—to understand whether these nurses behave more like ADN nurses or like nurses with baccalaureate +
- The data do not allow us to distinguish between nurses who entered the profession with an ADN:
 - and pursued additional education (the “education mobility” group)
 - after obtaining a baccalaureate or higher in another field (the “career mobility” group)
- For purpose of analysis, we call them “mobility nurses”

Settings and Practice Areas: Do Mobility Nurses Look More like ADN's or Baccalaureate + Nurses?

Settings of Mobility Nurses

- Mobility nurses look more like baccalaureate + nurses
- Mobility nurses less likely to work in long-term care and home health than ADN's who did not pursue additional education

Practice Areas of Mobility Nurses

- Mobility nurses less likely than ADN nurses to practice in geriatrics
- But slightly more likely to practice in public health, mental health and general practice/family health than either ADN's or baccalaureate+ nurses

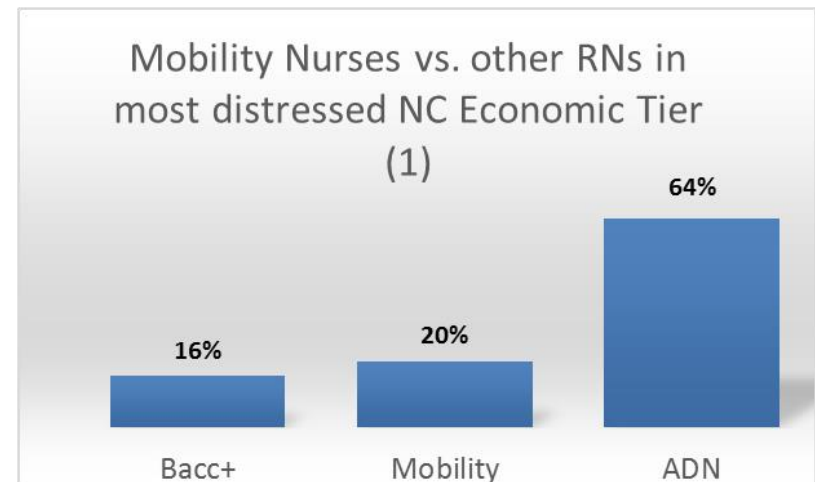
Rural/Urban Counties & Economic Tiers in North Carolina: Do Mobility Nurses Look More like ADN's or Baccalaureate + Nurses?

Mobility Nurses in Rural vs. Urban Counties

- Mobility nurses are twice as likely to work in rural counties than baccalaureate + nurses.
- But they are 25% less likely to work in rural counties than ADN's

Mobility Nurses & Economic Tiers

- Mobility nurses are much less likely to work in Tier 1 counties than ADN's, however slightly more likely than baccalaureate+ nurses.



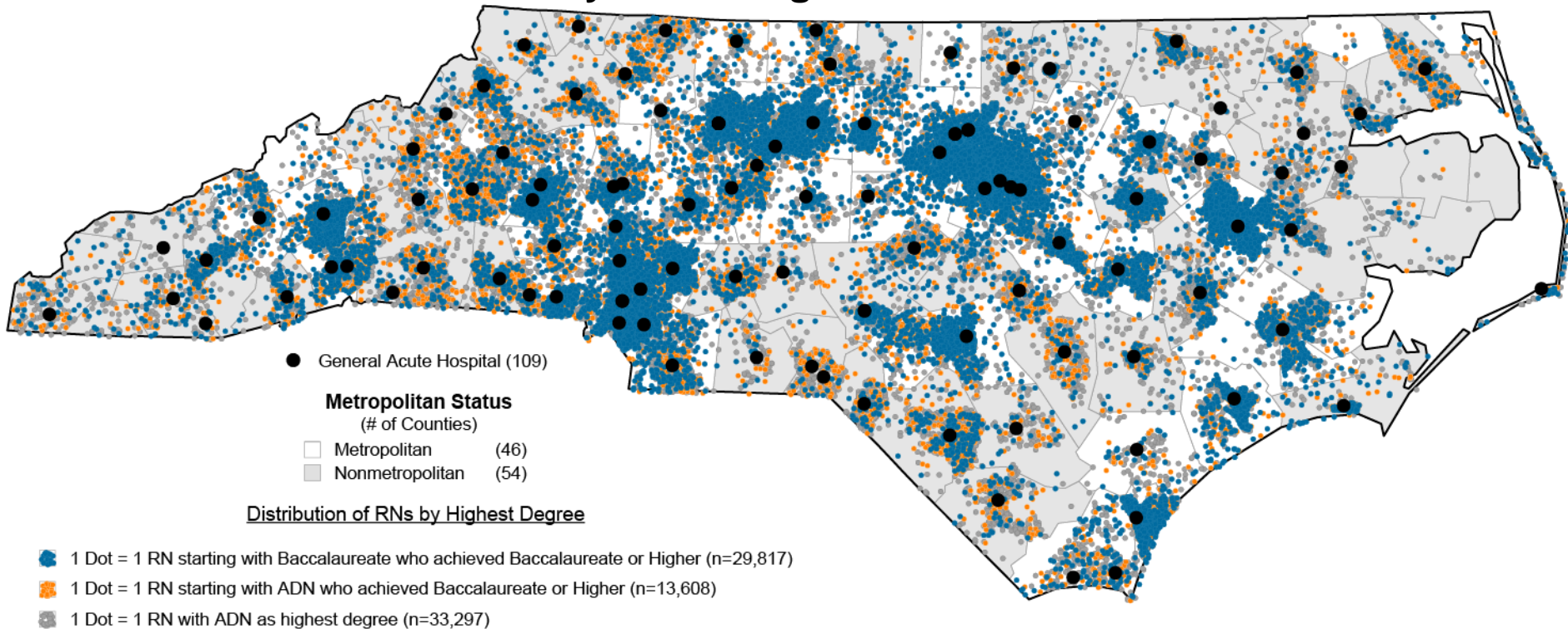
Source for economic tiers: <http://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations>. Retrieved 5/12/14.

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 who achieve higher degrees cluster more than ADNs and spread more than BSN counterparts

Distribution of RNs Who Achieved a Baccalaureate or Higher Who Are 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 had an ADN or a Baccalaureate as their entry degree that went on to achieve a baccalaureate 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.ncdhs.gov/dhsr/data/hlist.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.

LUNCH!



The future of nursing in North Carolina: implications of health system transformation on the nursing workforce



UNC

THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

Health system redesign and the new world of health workforce planning

All about the redesign of *how* health care is delivered — less emphasis on *who* delivers care:

- Patient Centered Medical Home
- Accountable Care Organizations
- Technology

Shift will require more “flexible” nursing workforce with new skills and competencies



Accountable Care Organizations & Patient Centered Medical Homes

Key characteristics

- Emphasis on primary and preventive care
- Health care is integrated across:
 - medical sub-specialties, home health agencies and nursing homes
 - **community- and home-based** services
- Technology used to monitor health and report population health outcomes
- Payment incentives promote accountability, move toward “risk-based” and “value-based” models of care
- Designed to lower cost, increase quality, improve patient experience

Different health system means different workers

A transformed health care system will require a transformed workforce.

The people who will support health system transformation for communities and populations will require different knowledge and skills... in prevention, care coordination, care process re-engineering, dissemination of best practices, team-based care, continuous quality improvement, and the use of data to support a transformed system

Health workforce planning in the new world of health reform

- **Lots of people asking:** “How can we align payment incentives and new models of care to achieve the triple aim?”
- **Not enough people asking:** “How do we transform our health workforce to achieve the triple aim? ”
- Rapid health system change requires retooling:
 - the health workforce
 - the questions we ask (and answer) ***and***
 - the education, regulatory and payment systems

Reframe #1: From numbers to content

Old School

- How many nurses will we need?

New School

- Does the nursing workforce have the right skills and competencies needed to function in new models of care?

How do nurses fit in new models of care?

- PCMHs and ACOs emphasize care coordination, population health management, patient education and engagement, and many other new skill sets
- Lots of enthusiasm for new models of care but limited understanding of implications for workforce training
- New models of care may not be showing expected outcomes because workforce not systematically included in redesign
- Workers with the right skills and training are integral to the ability of new models of care to constrain costs and improve care (Bodenheimer and Berry-Millett, 2009)

Reframe #2: From provider type to provider role

Old School

- How many of x, y, z health professional type will we need?

New School

- What roles are needed and how can different skill mix configurations meet these needs in different geographies and practice settings?

Case study 1: Medical assistants in new roles in new models of care

- MAs doing “front” and “back” office duties
- Immunizations, blood draws, other clinical tasks
- Acting as health coaches
- Conducting home visits
- Managing population health
- Working with EHRs and managing registries
- Acting as “scribes”

Case Study 2: New roles for nurses

- Nurses doing more care coordination for different types of patients
- Managing transitions care across acute, ambulatory, community settings (including patient home)
- Creating care plans
- Engaging and educating patient and family
- Performing outreach and population health management
- Connecting patients with community-based services

Reframe #3: From focus on pipeline to focus on retooling existing workforce

Old School

- Redesigning curriculum for nursing students in the pipeline

New School

- Retooling the 100,000 nurses already employed in NC's health care system to function in new models of care

Workforce already employed in the system will be the ones to transform care

- To date, most workforce policy focus has been on redesigning educational curriculum for students in the pipeline
- **But it is the nearly 100,000 nurses already in the system who will transform care in North Carolina**
- Rapid health system change requires not only producing “shiny new graduates” but also upgrading skills of existing workforce
- Need to identify and codify emerging health professional roles and then train for them:
 - develop more community- and home-based clinical placements
 - identify and support innovative, “model” interprofessional practice sites **in community-based settings**

Workforce is shifting from acute to community settings

- Changes in payment policy and health system organization:
 - Shift from fee-for-service toward bundled care payments, risk- and value-based models
 - Fines that penalize hospitals for readmissions
- Will increasingly shift health care — and the health care workforce — from expensive inpatient settings to ambulatory, community and home-based settings
- But we generally educate nurses in inpatient settings
- Current workforce not adequately prepared to work in ambulatory settings and patients' homes.

Existing workforce will also need more career flexibility

- Rapid and ongoing health system change will require a nursing workforce with “career flexibility”
- “Clinicians want well-defined career frameworks that provide flexibility to change roles and settings, develop new capabilities and alter their professional focus in response to the changing healthcare environment, the needs of patients and their own aspirations” (NHS England)
- Need better and seamless career ladders to allow nurses to retrain for deployment in different settings, services and patient populations

Reframe #4: From a focus on workforce planning for professions to workforce planning for patients

Old School

- We have focused on estimating the numbers of different types of health professionals needed

New School

- What if we started by asking “what are patients’ needs for care and how can we redesign the nursing workforce to better meet those needs?”

Planning a workforce for health, not a health workforce

Patient-centered workforce planning means:

- Planning for a nursing workforce increasingly deployed in community and home-based settings
- Embracing role of nurses in working with social workers, patient navigators, community health workers, home health workers, dietitians and other community-based workers
- Integrating health workforce and public health workforce planning
- Workforce planning for population health and patients, **not** for needs of professions

Reframe #5: From workforce planning *within* care settings to workforce planning *across* care settings

Old School

- Workforce planning focused on numbers of nurses needed in acute, outpatient, long term care and other settings

New School

- Workforce planning from the patient's perspective—who will integrate care and manage transitions between home, outpatient and acute settings?

New types of health professional roles are emerging in evolving system

Emerging Roles

- Patient navigators
- Nurse case managers
- Care coordinators
- Community health workers
- Care transition specialists
- Living skills specialists
- Patient family activator
- Peer and family mentors

Implications

- All these professions play role in managing patient transitions between home, community, ambulatory and acute care health settings
- Evidence shows improved care transitions reduce unnecessary hospital admissions, lower costs and improve patient satisfaction

Retooling: How do we get there from here?



- It's not just the nursing workforce that needs to be retooled
- We need to retool the system that supports the workforce: education, reimbursement and regulation needs to be more responsive to changes in front-line health care delivery

We need to better connect education to practice

“Revolutionary changes in the nature and form of health care delivery are reverberating backward into...education as leaders of the new practice organizations demand that the educational mission be responsive to their needs for practitioners who can work with teams in more flexible and changing organizations...”

- But education system is lagging because it remains largely insulated from care delivery reform
- Need closer linkages between health care delivery and education systems—four year, two year and continuing education

Redesign education to prepare current nursing workforce for new roles

Need to redesign education system so nurses can flexibly gain new skills and competencies

- Training must be convenient – timing, location, and financial incentives must be taken into consideration
- Strengthen career ladders
- Prepare faculty to teach new roles and functions

Need to education nurses in interprofessional teams

- All team members need to understand:
 - content of new role and feel individual(s) appropriately trained to take on the new role
 - how new role fits into workflow and overlaps with their role

It's not just education that is lagging, regulatory system needs to be restructured

“The workforce innovations needed to implement ACA programs require an adaptable regulatory system capable of evolving with the health care environment. The health profession regulation system in place today does not have the flexibility to support change.”

- To create a more dynamic regulatory system, we need:
 - to develop evidence to support regulatory changes, especially for new roles
 - better evaluation of pilot workforce interventions to understand if interventions improve health, lower costs and enhance satisfaction
 - to establish a national clearinghouse to provide up-to-date and reliable information about scope of practice changes in other states

And last but not least, who is going to pay for all this retooling we need to do?

- Adequate and sustainable payment models to retool and redeploy the workforce are lacking
- How can nurses take time out for education in system that rewards volume over value?
- Many workforce innovations are supported by one-time funds. If payment models don't change rapidly enough, will these interventions be sustainable?

Contact info

Erin Fraher, PhD MPP

Director

Program on Health Workforce
Policy and Research

erin_fraher@unc.edu

919-966-5012

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

Data Sources

- **Workforce Data**

Note: Data include RNs who were actively practicing in North Carolina as of October 31 of the respective year. Source: North Carolina Health Professions Data System, with data derived from the NC Board of Nursing.

- **Rural Definitions**

Note: “Core Based Statistical Area” (CBSA) is the OMB’s collective term for Metropolitan and Micropolitan Statistical areas. In these analyses, nonmetropolitan counties include micropolitan and counties outside of CBSAs. Source: US Census Bureau and Office of Management and Budget, March 2013.

- **Economic Tiers**

Source for 2007-2014: <http://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations>. Retrieved 5/12/14.