

North Carolina's Physician Training Programs Are Not Producing the Workforce Needed to Meet Population Health Needs

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The Joint Oversight Subcommittee on Medical Education Programs and
Medical Residency Programs

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This presentation in one slide

- North Carolina doesn't face an overall physician shortage. We face a shortage of physicians in rural areas and needed specialties
- Some residency programs are producing workforce needed for our state; most are not
- North Carolina can fix this—but we need transparency and accountability in spending and outcomes
- There are lessons to learn from other states' efforts to reform Medicaid GME



My role is to provide committee with objective data on workforce outcomes

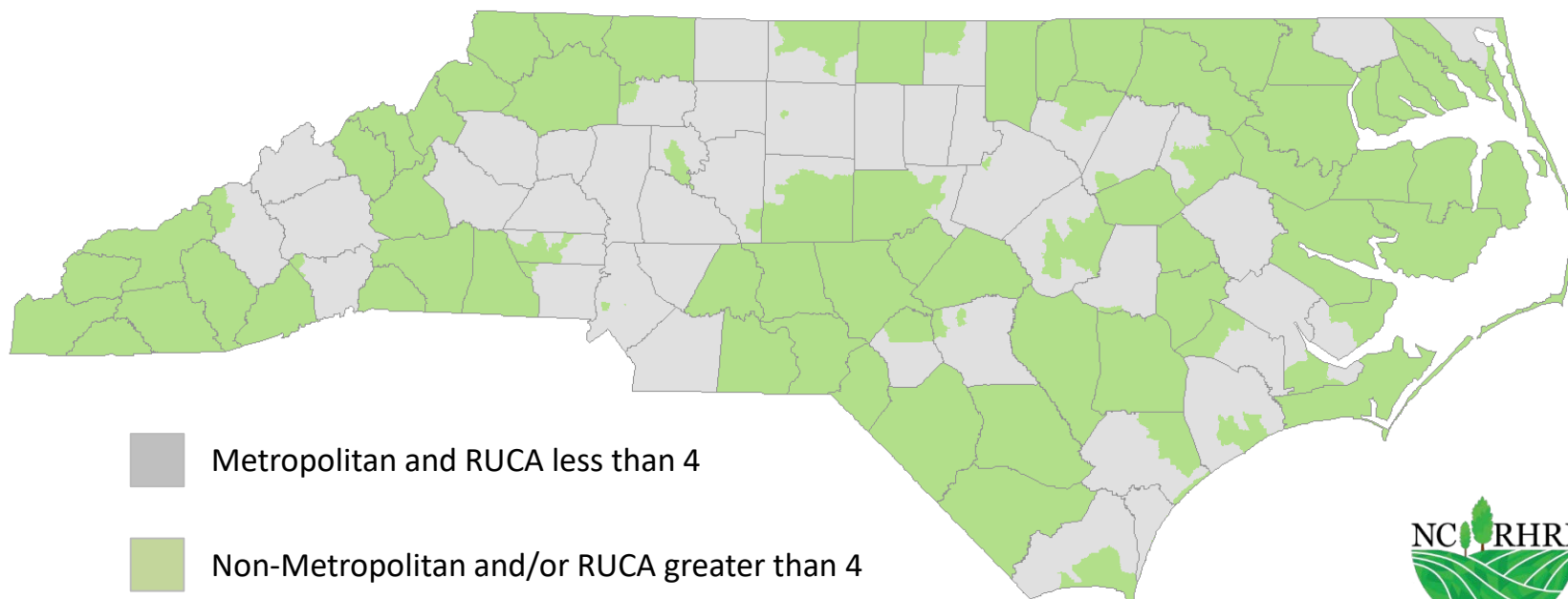
- Goal of this presentation: provide data on workforce outcomes of GME training requested in S.L. 2017-57, Sec. 11J.2 (SB 257, Sec. 11J.2)
- Our research program dedicated to providing timely, objective research to inform health workforce policy
- Based at Cecil G. Sheps Center for Health Services Research at UNC-CH. Focus is statewide and national
- I sit on Council of Graduate Medical Education, independent advisory board that advises US Congress and DHHS Secretary on GME and physician workforce issues

Definition of rural matters.

Here's our definition for this presentation

Metropolitan Status, North Carolina, 2013

Based on Non-Metropolitan Counties and Rural Urban Commuting Areas



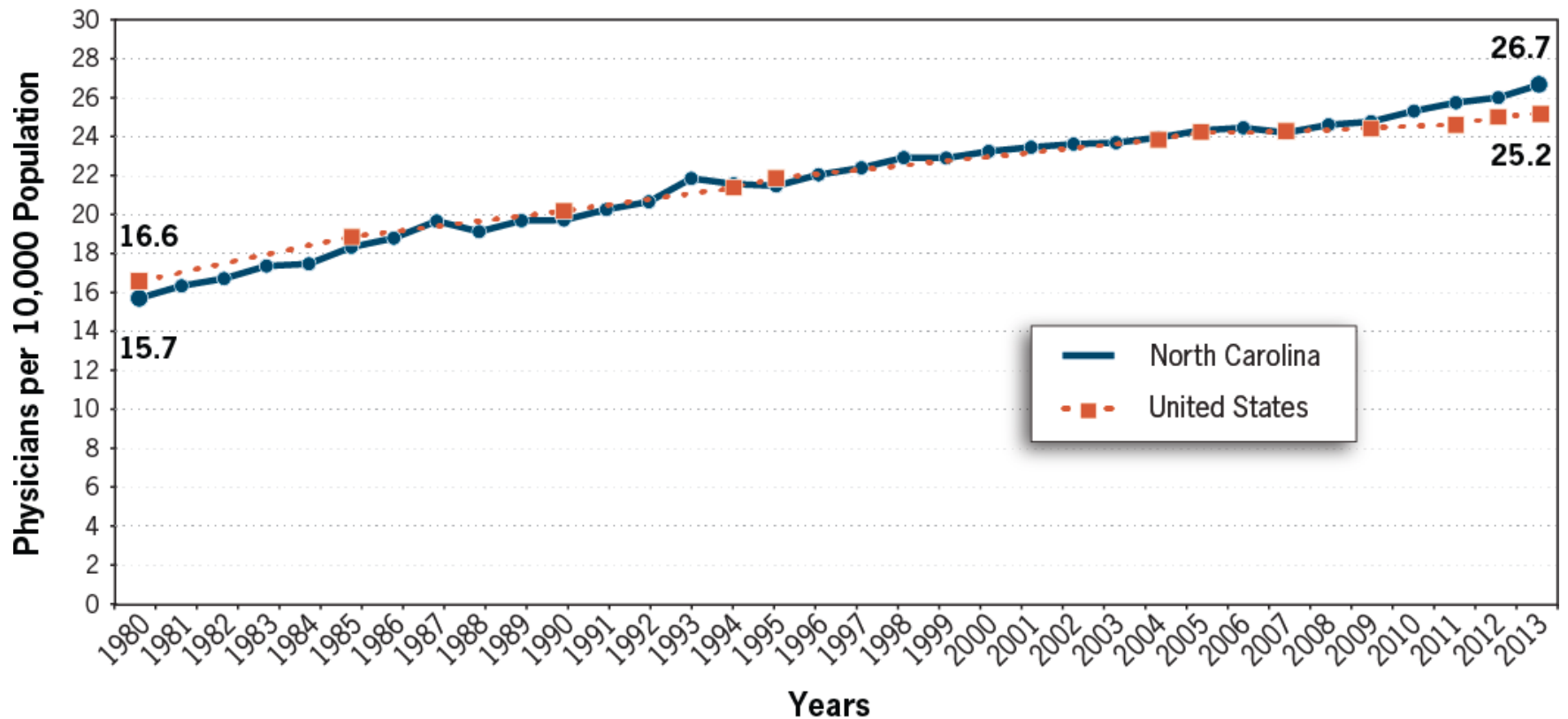
Sources: CBSAs: US Census Bureau, Office of Management and Budget; "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. RUCAs: WWAMI Rural Health Research Center; Rural Urban Commuting Areas (RUCAs) are based on 2000 Census commuting data and 2004 ZIP code data. See <http://depts.washington.edu/uwruca/ruca-codes.php> for RUCA values definitions. Produced By: Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

The State of the State



Fears of physician shortages create headlines but we see steady increase in supply in NC...

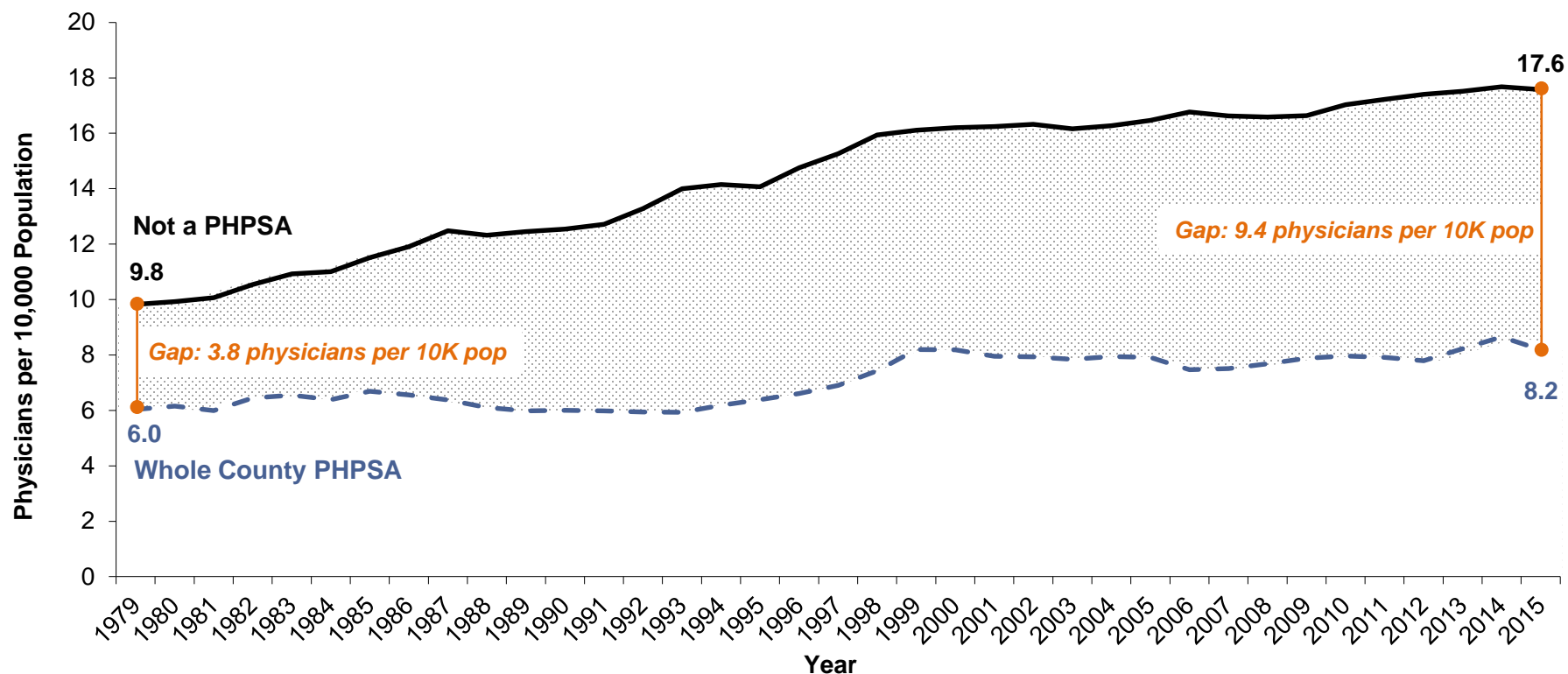
Physicians per 10,000 population, North Carolina and United States, 1980-2013



Sources: North Carolina Health Professions Data System, 1979 to 2013; American Medical Association Physician Databook, selected years; US Census Bureau; North Carolina Office of State Planning. North Carolina physician data include all licensed, active, physicians practicing in-state, inclusive of residents in-training and federally employed physicians, US data includes total physicians in patient care, which is inclusive of residents-in-training and federally employed physicians. US physician data shown for 1980, 1985, 1990, 1994, 1995, 2004, 2005, 2007, 2009, 2011, 2012, 2013; all other years imputed.

The real issue is maldistribution. Gap between shortage and non-shortage counties is growing

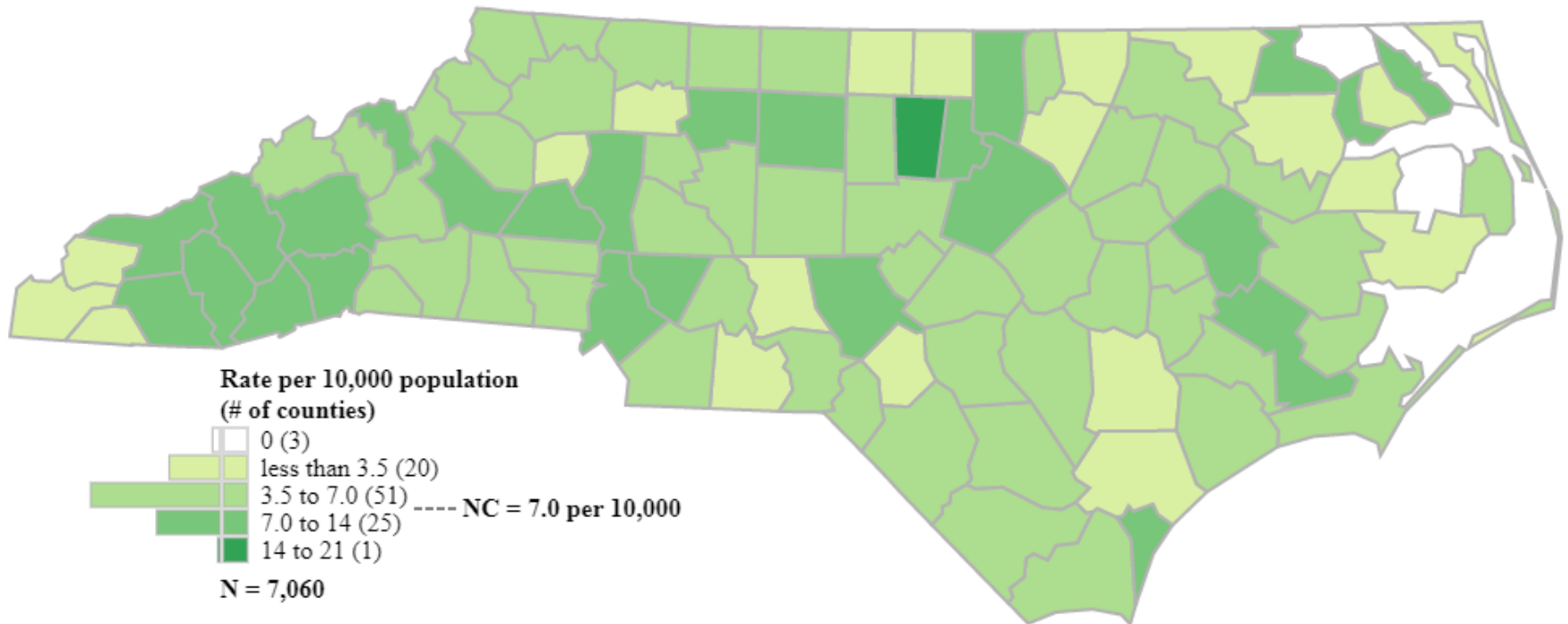
Physicians per 10,000 population by Persistent Health Professional Shortage Area (PHPSA) Status, North Carolina, 1980-2015



Notes: Figures include active, in-state, 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.

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

Physicians with a Primary Area of Practice of Primary Care per 10,000 Population in 2016



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 5, 2017 at <https://hpds.sirsdemo.unc.edu>.



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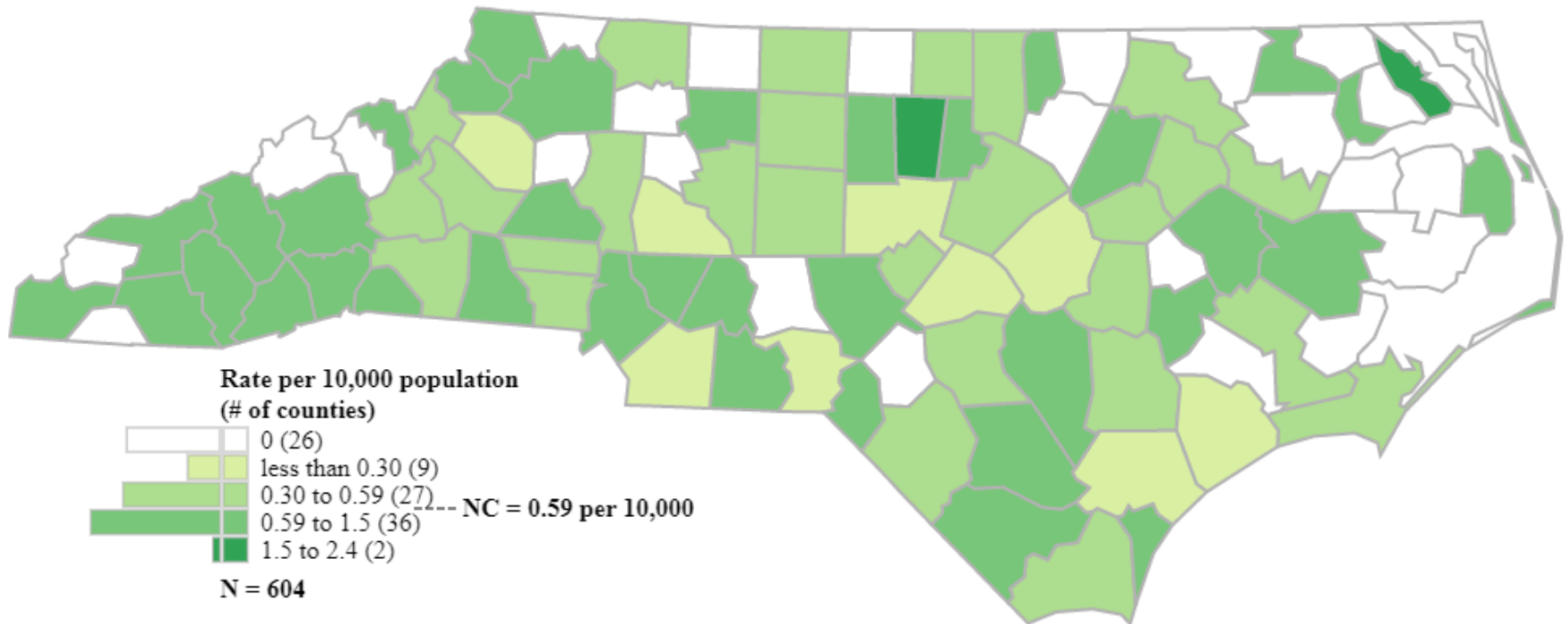
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26 NC counties have no general surgeon

Physicians with a Primary Area of Practice of General Surgery per 10,000 Population in 2016



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 5, 2017 at <https://hpds.sirsdemo.unc.edu>.



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Closures of obstetric delivery units in rural NC have made state and national headlines

LISTEN TO AMERICA

A partnership between Carolina Public Press and HuffPost

Rural Maternity Wards Are Closing

Women's Lives Are On The Line

In the mountains of western North Carolina, pregnant women don't know where to deliver.

By Catherine Pearson and Frank Taylor | 09/25/2017 05:45 am ET | Updated Sep 26, 2017

hospitals forced to close their birth wards

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LETTER FROM NORTH CAROLINA

Rural Hospitals Are Dying and Pregnant Women Are Paying the Price

Heavily reliant on Medicaid dollars, small hospitals shut down maternity wards just to stay afloat.

By LISA RAB | October 03, 2017

J. Scott Applewhite/AP Photo

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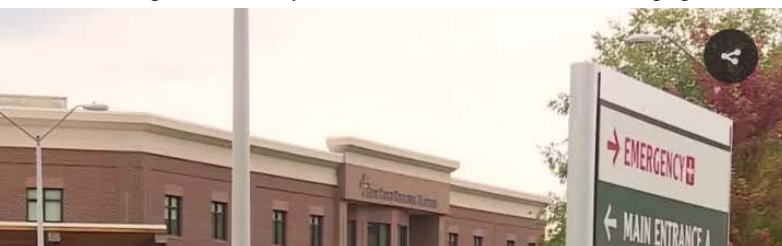
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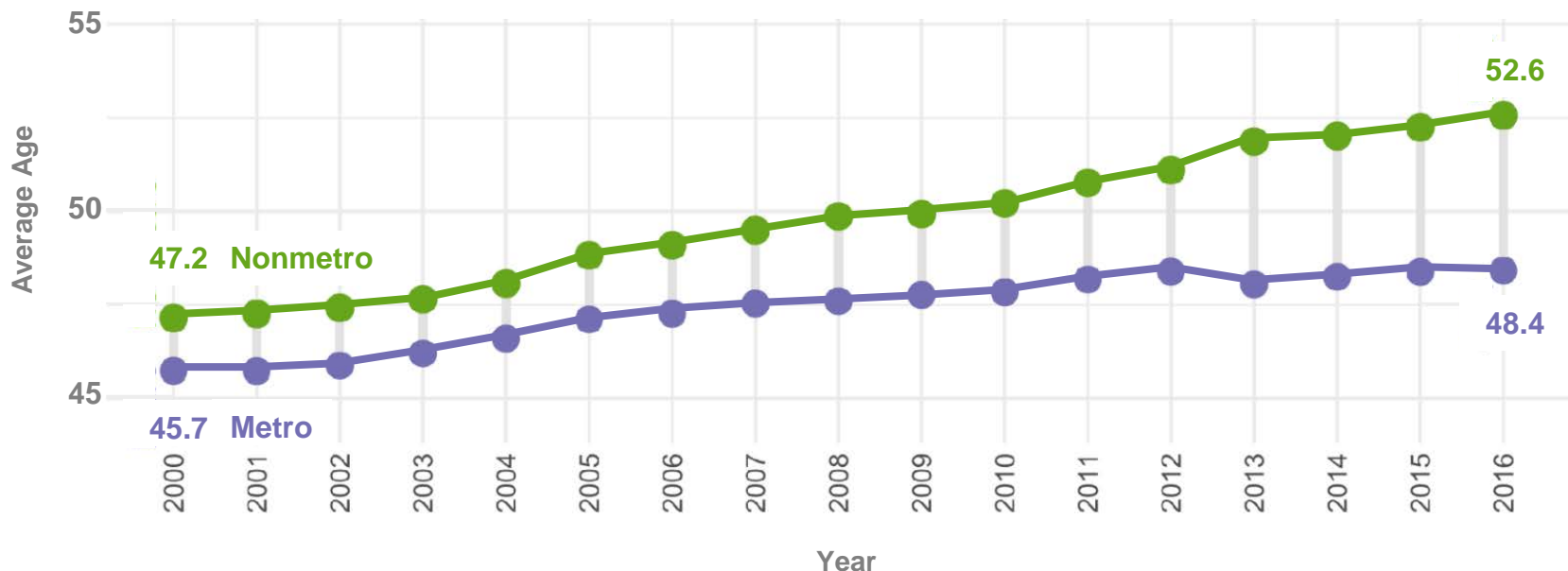
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BOONE, N.C.—Three years ago, Lucia Parker gave birth to her first child surrounded by people she loved. Her mother, sister, and husband were by her side at Blue Ridge Regional Hospital, and the nurses attending her were family friends. Each of them took turns massaging her back. They lifted her out of a



And rural workforce is aging at faster pace than urban workforce

Average Age of North Carolina Physicians Over Time (Metro vs. Nonmetro)



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. 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.

**Simply investing in more
GME training is not going
to address these issues**

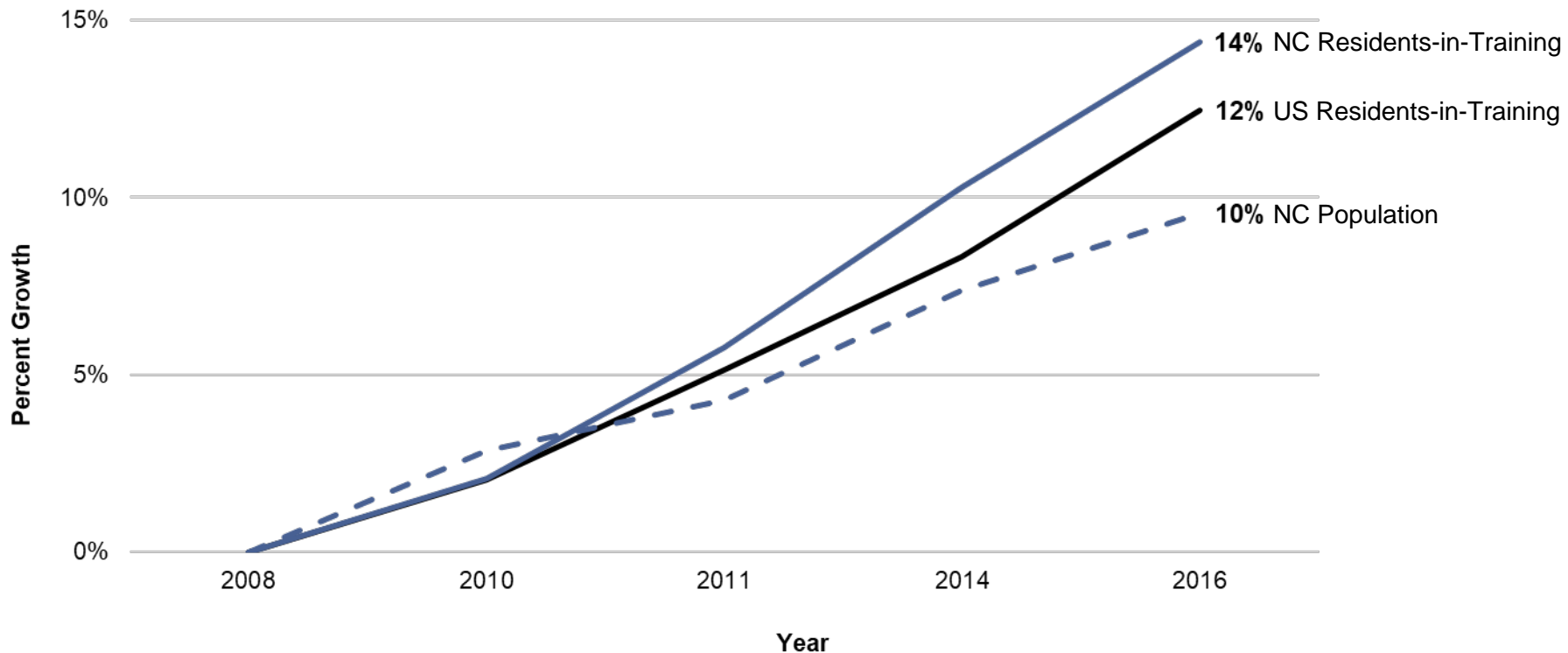


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North Carolina has experienced growth in total number of residents

Cumulative Growth in Number of NC and US Residents-in-Training and NC Population Since 2008



Note: Residency data are effective Dec 31 of each year except 2008, which is Aug 1.

Sources: AAMC State Physician Workforce Data Reports, 2009-2017, <https://www.aamc.org/data/workforce/reports/>; NC population data from Log Into North Carolina (LINC), accessed 2/12/18.

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

But the pipeline is leaky

We tracked the outcomes five years after graduation for:
2,009 physicians who graduated from NC residency programs in 2008, 2009, 2010 or 2011
for specialties identified as being in shortage by the NC General Assembly*

853 (42%) were in practice in North Carolina five years after graduation

65 (3%) were in practice in rural North Carolina counties five years after graduation

12 (0.6%)
Family
Medicine

4 (0.2%)
General
Pediatrics

4 (0.2%)
General
Surgery

4 (0.2%)
General Internal
Medicine

4 (0.2%)
Obstetrics &
Gynecology

13 (0.6%)**
General
Psychiatry

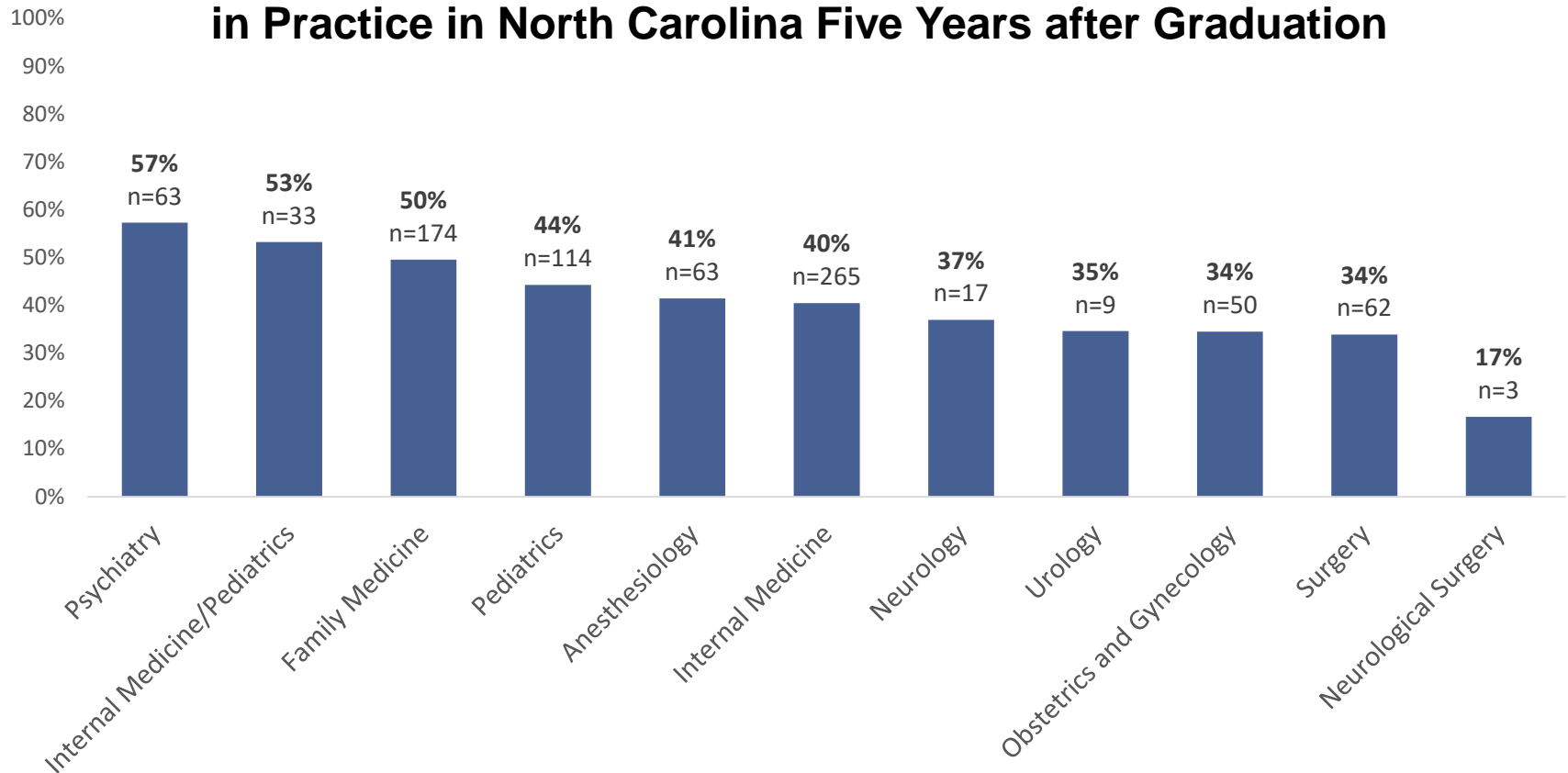
14 (0.7%)
Other
specialties*

Notes: The workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011 were analyzed. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice. *North Carolina Session Law 2017-57, Section 11J.2. Includes anesthesiology, neurology, neurological surgery, obstetrics and gynecology, family medicine, internal medicine, internal medicine/pediatrics, pediatrics, psychiatry, surgery, and urology. **Central Regional Hospital and affiliated state psychiatric facilities are located in Granville County, which is a nonmetro county. At least 6 of these psychiatrists were employed by the state in Granville County. Source: NC Health Professions Data System, Cecil G. Sheps Center for Health Services Research, UNC-CH, with data derived from the North Carolina Medical Board.



Most graduates are not retained in state

Percent of North Carolina Residents Graduating in 2008, 2009, 2010, 2011 in Practice in North Carolina Five Years after Graduation



Notes: The values in this table are derived from aggregating the workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice.



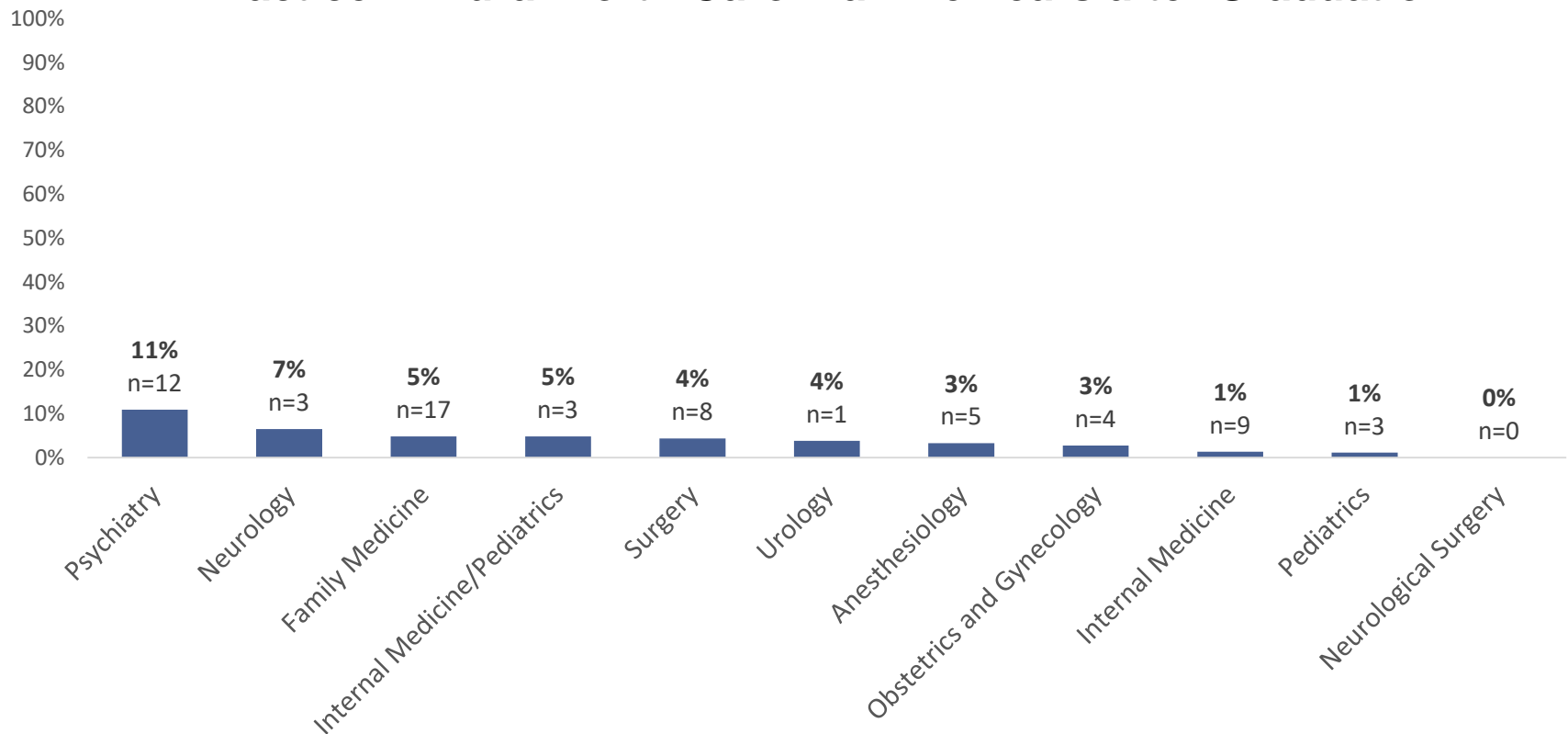
Averages mask variation in retention in NC between training programs

Some training programs perform better than others in retaining graduates in North Carolina:

- Psychiatry: average 57%; range 39% to 69%
- Family medicine: average 50%; range 25% to 74%
- Pediatrics: average 44%; range 30% to 56%
- Internal Medicine: average 40%; range 33% to 66%
- Ob/Gyn: average 34%; range 20% to 50%
- Surgery: average 34%; range 18% to 47%

Even fewer practice in rural North Carolina after graduation

Percent of North Carolina Residents Graduating in 2008, 2009, 2010, 2011 in Practice in Rural North Carolina Five Years after Graduation



Notes: The values in this table are derived from aggregating the workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice. Rural areas are based on 2015 Office of Management and Budget metropolitan status codes and 2010 US Census Bureau Rural-Urban Commuting Area (RUCA) codes. Rural areas are either a) in a nonmetropolitan county or b) in an area within a metropolitan county that has a RUCA code of 4 or greater.



Averages mask variation in rural practice between training programs

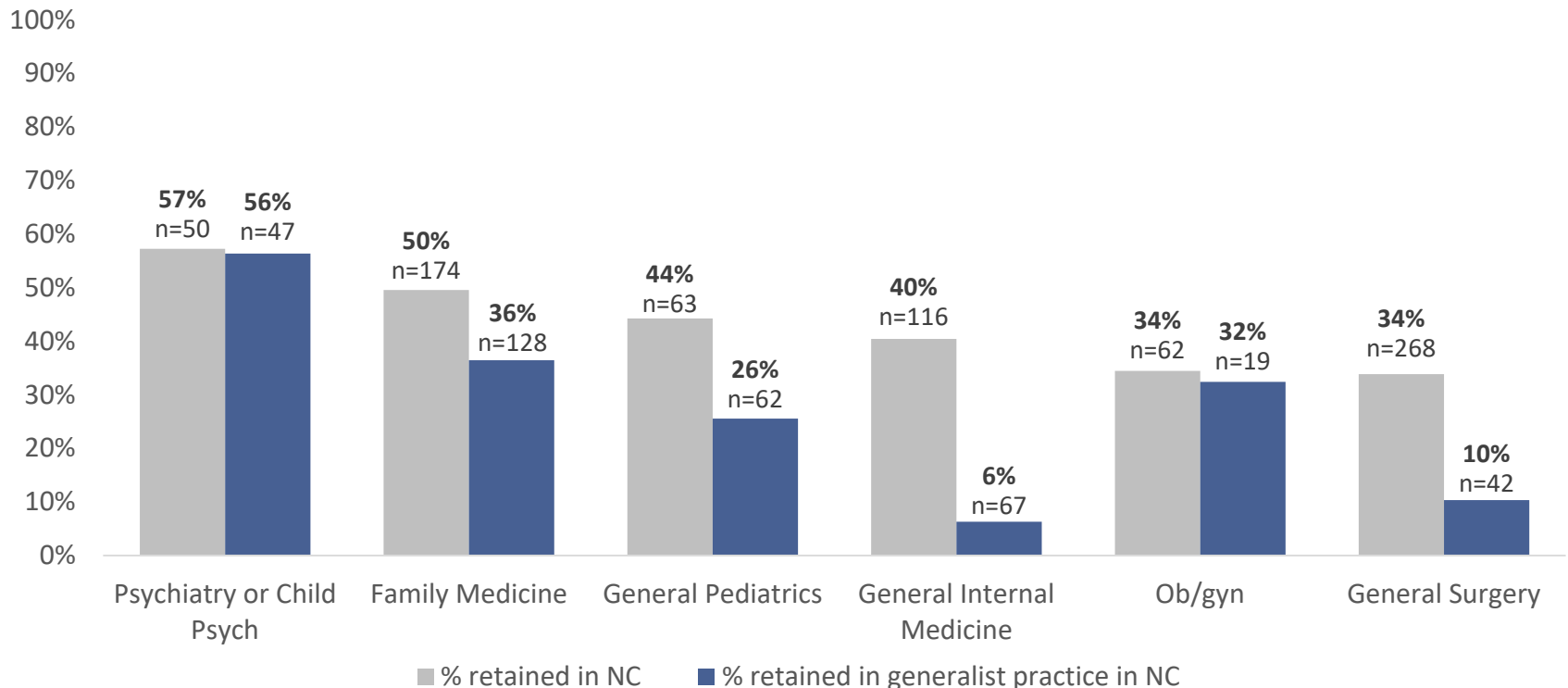
Some training programs perform better than others in retaining graduates in rural practice in North Carolina:

- Psychiatry: average 11%; range 6% to 15%
- Family medicine: average 5%; range 0%-11%
- Surgery: average 4%; range 0% to 18%
- Ob/Gyn: average 3%; range 0% to 11%
- Pediatrics: average 1%; range 0% to 5%
- Internal Medicine: average 1%; range 0% to 4%



State needs generalists to meet primary care, mental health, obstetric care and surgery needs of our population

Percent of North Carolina Residents Graduating in 2008, 2009, 2010, 2011 in Generalist Practice and in Generalist Practice in North Carolina



Notes: The values in this table are derived from aggregating the workforce outcomes of four cohorts of residents who completed training in 2008, 2009, 2010, or 2011. We used North Carolina Medical Board licensure data to determine the location and primary area of practice for each physician five years after graduation, e.g., for a resident who completed training in 2008, we used 2013 NC Medical Board data to determine his/her location and primary area of practice. Rural areas are based on 2015 Office of Management and Budget metropolitan status codes and 2010 US Census Bureau Rural-Urban Commuting Area (RUCA) codes. Rural areas are either a) in a nonmetropolitan county or b) in an area within a metropolitan county that has a RUCA code of 4 or greater.

What are other states doing?



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NC spends ~\$90 million on Medicaid GME. Ranked 5th in 2012

- Total Medicaid GME payments increased 10% from \$3.87 billion in 2012 to \$4.26 billion in 2015*
- In 2015, 43 states and DC made Medicaid GME payments*
- In 2015-2016, we undertook study of 10 states engaged in Medicaid GME reform
- NC was not included in our sample

*Henderson T. Medicaid Graduate Medical Education Payments: A 50-State Survey. Association of American Medical Colleges: Washington, DC. 2013.
<https://members.aamc.org/eweb/upload/Medicaid%20Graduate%20Medical%20Education%20Payments%20A%2050-State%20Survey.pdf>

Finding #1: Impetus for GME reform stemmed from multiple sources

- Many states had a “champion” who articulated vision, coalesced stakeholders and worked with executive/legislative branches
- Many had “implementer” who focused on logistics of changing GME payment mechanism, applying for 1115 waiver or revising State Plan Amendment
- States undertook GME reform to address concerns about:
 - maldistribution by specialty, geography, setting
 - having enough GME slots to match medical school expansions (not an issue for NC)
 - potential loss of Teaching Health Center funds
 - disparities in GME funding received by different training institutions

Illustrative quote

“So we had some folks getting paid about \$4,000 per trainee and we had a couple of places paid in excess of \$60,000 per trainee...Folks never wanted to fiddle with it because the folks who were getting paid \$60,000 per trainee kind of liked it. What we did was publish what everybody was getting paid and it created this bit of an uproar where folks realized what the variation was. Then the conversation became ‘This is clearly unfair. It’s not rooted in policy. What do we do instead?’”

Finding #2: Different approaches to GME reform

- State approaches to reforming GME financing:
 - Better leveraging Medicaid funds
 - Pursuing 1115 waivers to modify federal rules for allocating GME funds
 - Delinking GME funding from claim
 - Creating innovation pools
 - Providing seed money for new training programs
 - Funding rural rotations and training tracks
- Many states identified resistance from teaching hospitals as reason for seeking new GME funds rather than redistributing existing funds



Illustrative quote

“For a few years they actually tried to appoint some task forces...but when the Governor's Office put this task force together it was essentially made up of folks from these academic medical centers and so the result of these kind of inquiries never really went too far because the hospitals of course have a vested interest in these funds just staying the way that they are.”

Finding #3:

Oversight bodies play critical role

- Most states had oversight body to:
 - Reach consensus on state workforce needs
 - Use data to decide where funds should be targeted
 - Educate legislature and DHHS about GME
 - Navigate competing interests of stakeholders
- Oversight bodies included range of GME stakeholders
- All were advisory, none were authoritative



Illustrative quote

“We're going to have to play together because this is everyone's problem, and so it became a group championing the effort as opposed to one or two organizations or one or two schools or something like that. We wanted to keep consensus and show that even though a pot of money would potentially land on the floor that we weren't going to pull out knives and swords and start fighting each over scarce resources”

Finding #4: We heard loud call for increased transparency

- States voiced desire to know how GME dollars were spent and “what they bought”
- Emphasized that little transparency currently existed
- In few states that had published data, transparency spurred reform
- In one state, GME funding was cut from Governor’s budget because of lack of data on return on investment (ROI). It was later restored by legislature

Illustrative quote

“Nobody owns this. That's one of the things we're trying to convince the state is somebody needs to own this and take interest in it, whether it be in terms of accountability, in transparency, because as we seek more funding people are going to say you need to be able to demonstrate to us that you're making a difference.”



Finding #5: We also heard loud call for increased accountability

- States were focused on fiscal accountability for Medicaid funds, not workforce outcomes
- Voiced strong desire to move toward system that better aligned funding with population health needs
- Cautious about how much training programs could be held accountable for workforce outcomes
- Interviewees repeatedly noted that training institutions benefited from lack of transparency and vigorously opposed increasing accountability



Illustrative quote

“We are trying to move into a more results, performance-based system that payments will be tied into satisfactory demonstration of a commitment to the health care needs of the state. There’s been no accountability, no reporting, no nothing, so the hope is eventually things will evolve and there’ll be accountability as far as of a redistribution of existing resources in a way that behooves the citizens with better access in rural and underserved areas”.

Finding #6. Lack of data and metrics are barrier to measuring workforce outcomes

- Workforce data collection and analysis seen as critical to demonstrate ROI
- Interviewees voiced need for financial support collect and analyze data to measure workforce outcomes
- Developing and operationalizing metrics that can be tied to funding decisions is tricky

Two illustrative quotes

“Connecting the dots precisely gets tricky”

“What I want to stress though is that was a fight that I did not want to fight. I purposely have left that out. For us, all these dollars are just to do training in these areas. Getting the person to remain in that and/or keep doing it over 5 years or 10 years was just too complicated to track at this point. Every time we went there, it just began to derail everything.”



Moving Forward



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We need to fundamentally change the way we invest in medical training

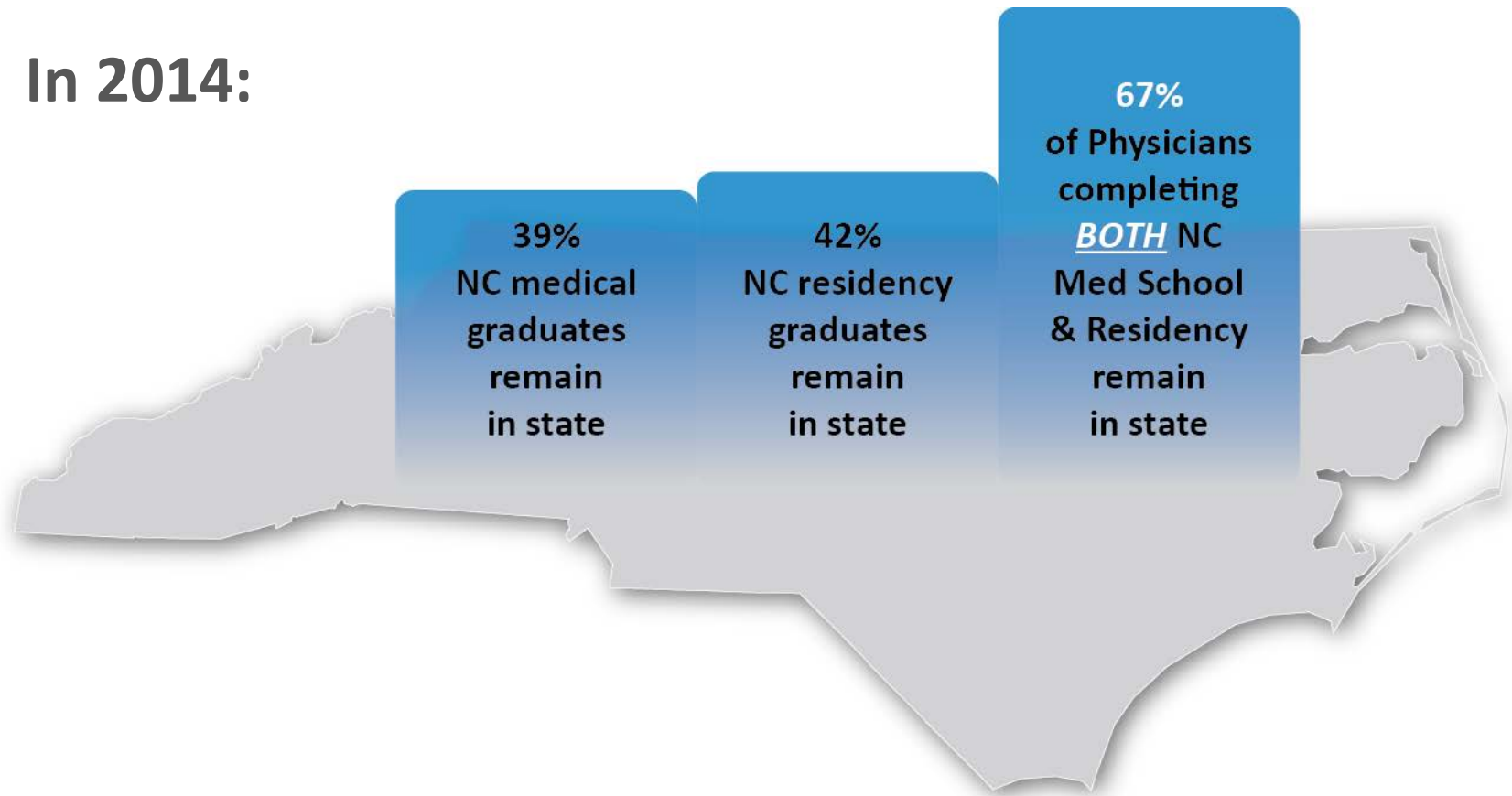
Legislature could require:

1. Transparency: require annual tracking of Medicaid GME funding
2. Accountability: invest resources in annual tracking of workforce outcomes to determine ROI for ~\$90 million Medicaid investment in GME
3. Oversight body: convene group to use data to target funding toward training programs and institutions that produce workforce to meet population health needs

Also need to address leaky pipeline through increased funding for loan repayment, community-based training programs and training tracks

Rural and Primary Care Training Tracks: Retention much higher for physicians completing both UME and GME instate

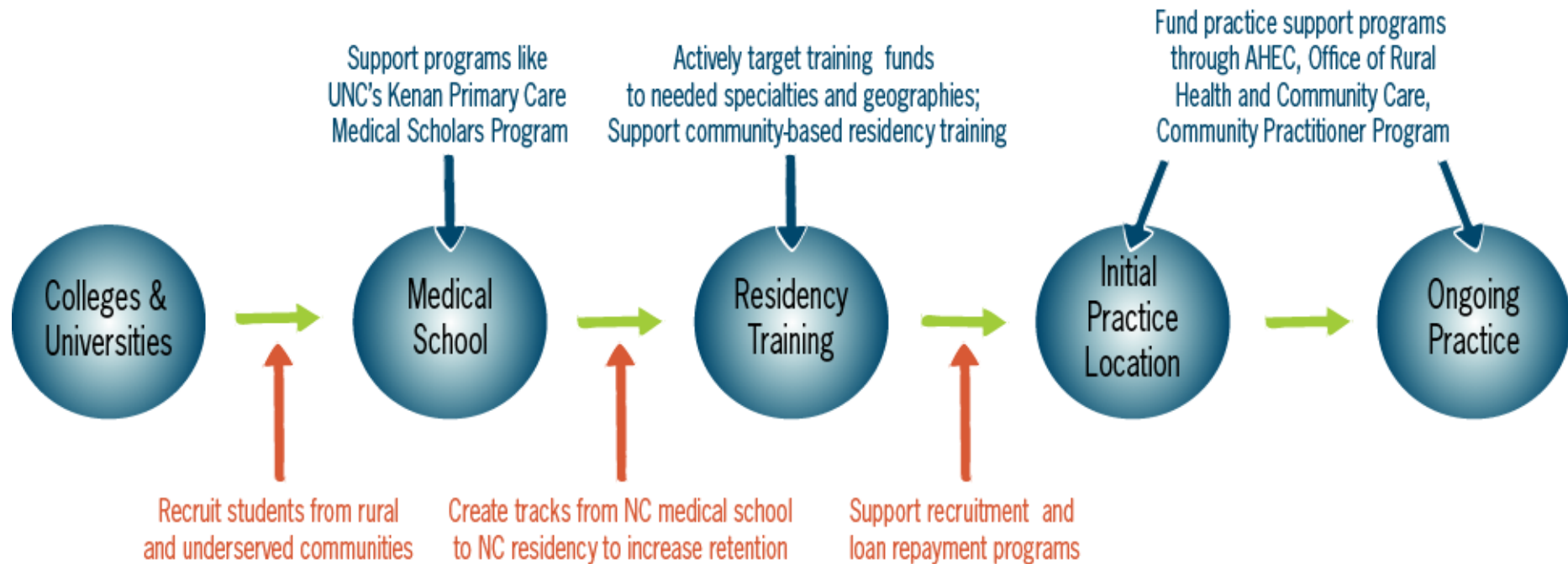
In 2014:



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



Multiple points in a physician's career trajectory where we can intervene



Want more data or resources?



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Access the Medicaid GME report and other presentations

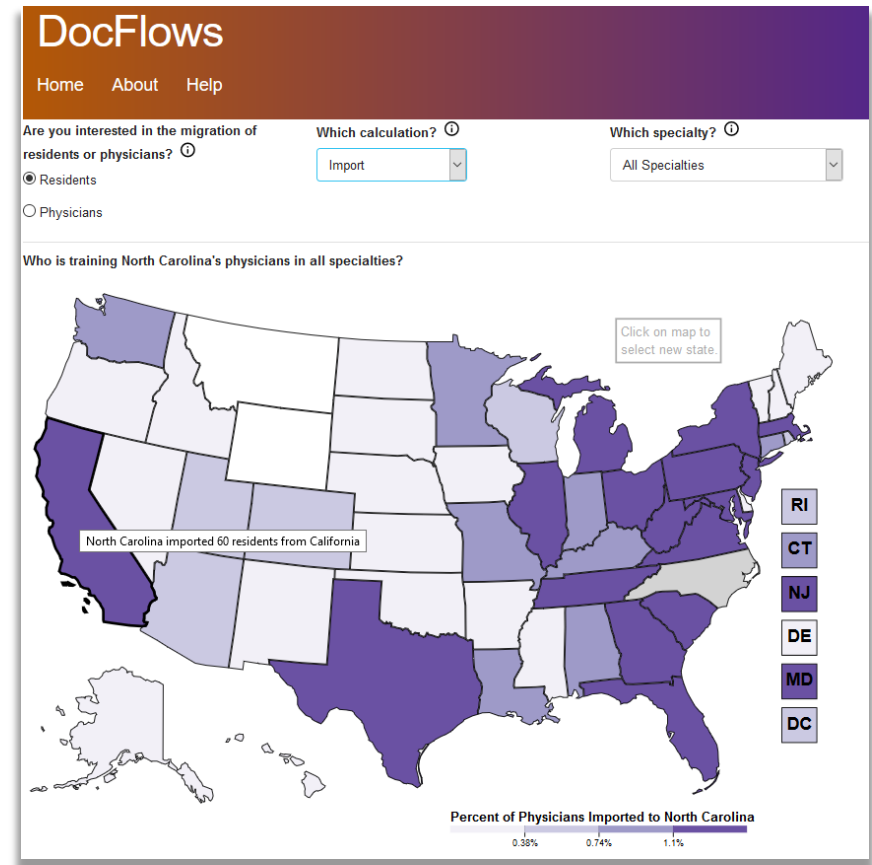


<http://www.shepscenter.unc.edu/programs-projects/workforce/projects/carolina-health-workforce-research-center/>



Access our DocFlows App that provides data on migration of residents after training

- Data visualization tool allows users to query, download and share maps showing moves by residents and actively practicing physicians between states in 36 specialties
- DocFlows available at: docflows.unc.edu



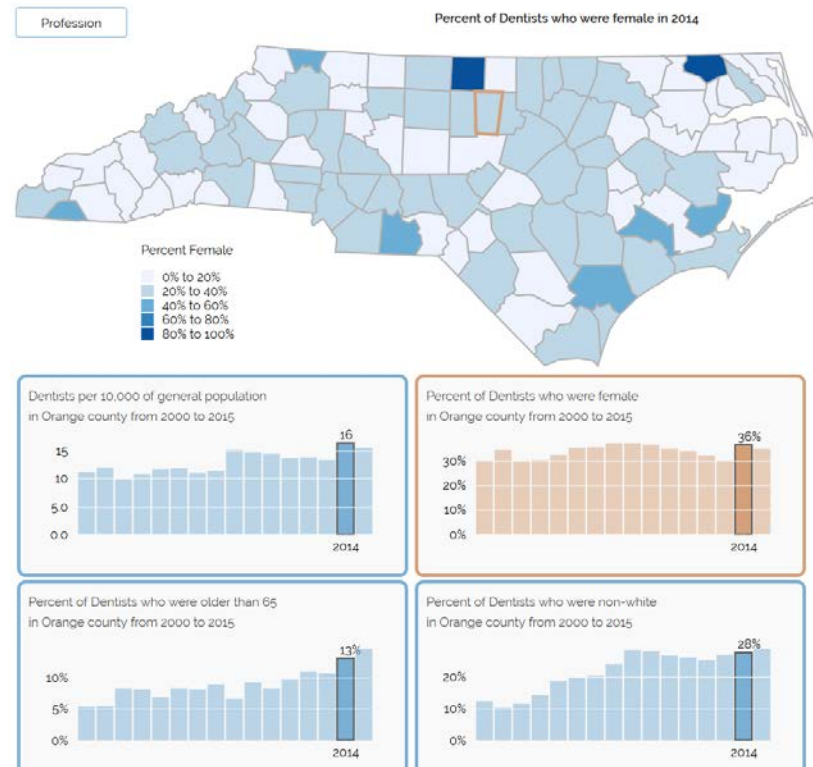
Use our online, interactive data visualization tool to access data on licensed health professionals in your region

- Explore 15 years of data on over a dozen health professions in NC
- Total supply, supply per 10K, percent female, percent over 65, percent minority
- State and county-level data
- Interactive map and bar charts
- Can download data for use in presentations or for analysis
- nchealthworkforce.sirs.unc.edu

North Carolina

Health Professions Data System

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Or contact us

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