

**Physician Supply and  
Distribution in NC:  
Geography, Demography, Policy**

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Hazel Hadley, BA.***

# Today's Goals

- ❖ Describe the geographic distribution of physician in NC
- ❖ Describe the age-gender structure of NC Physicians
- ❖ Comment on policies in other states and changes in production of physicians
- ❖ Comment on potential changes in NC

# Maps and more maps

- ❖ **Overall distribution**
  - **Total physician counts**
  - **Primary care physicians**
  - **Specialists**
  - **Age structure**
- ❖ **Changes in distribution**
- ❖ **Population factors**

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

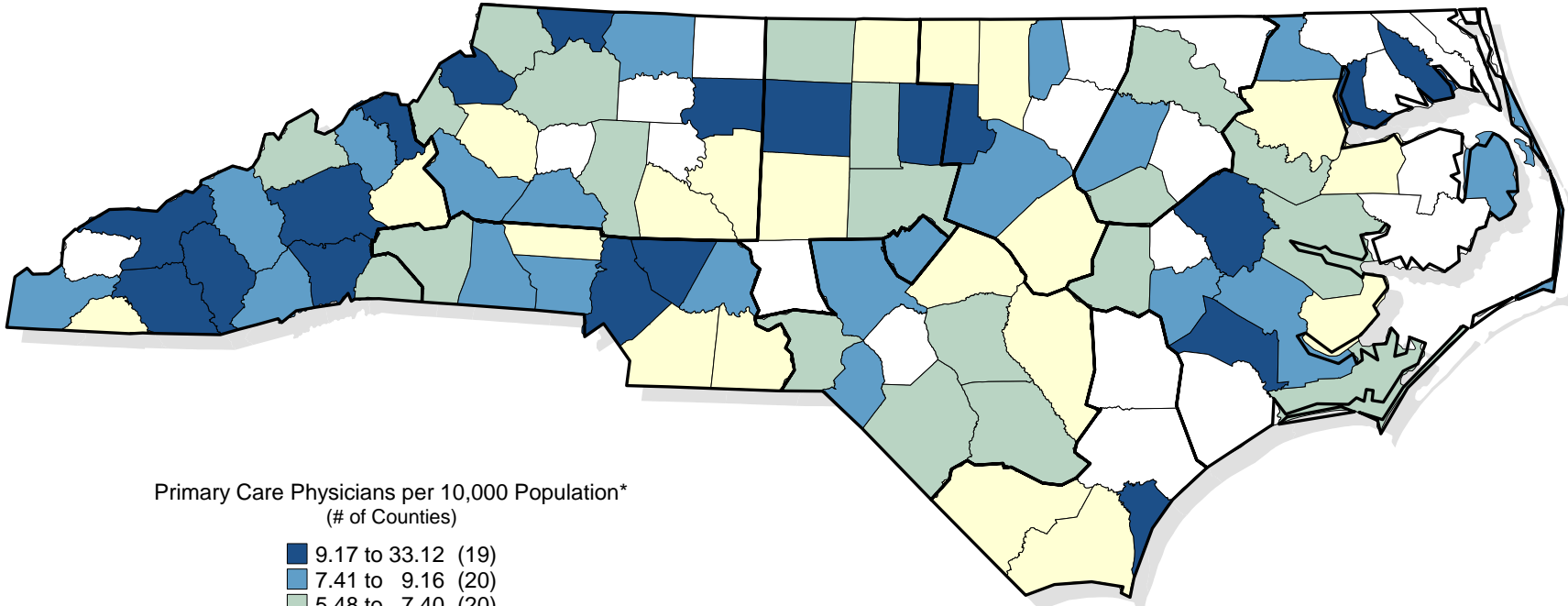
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TIFF (Uncompressed) decompressor  
are needed to see this picture.

# Maps: Physician Distribution, Age Structure, Supply Change, Population Dynamics

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# Primary Care Physicians per 10,000 Population North Carolina, 2004



Primary Care Physicians per 10,000 Population\*  
(# of Counties)

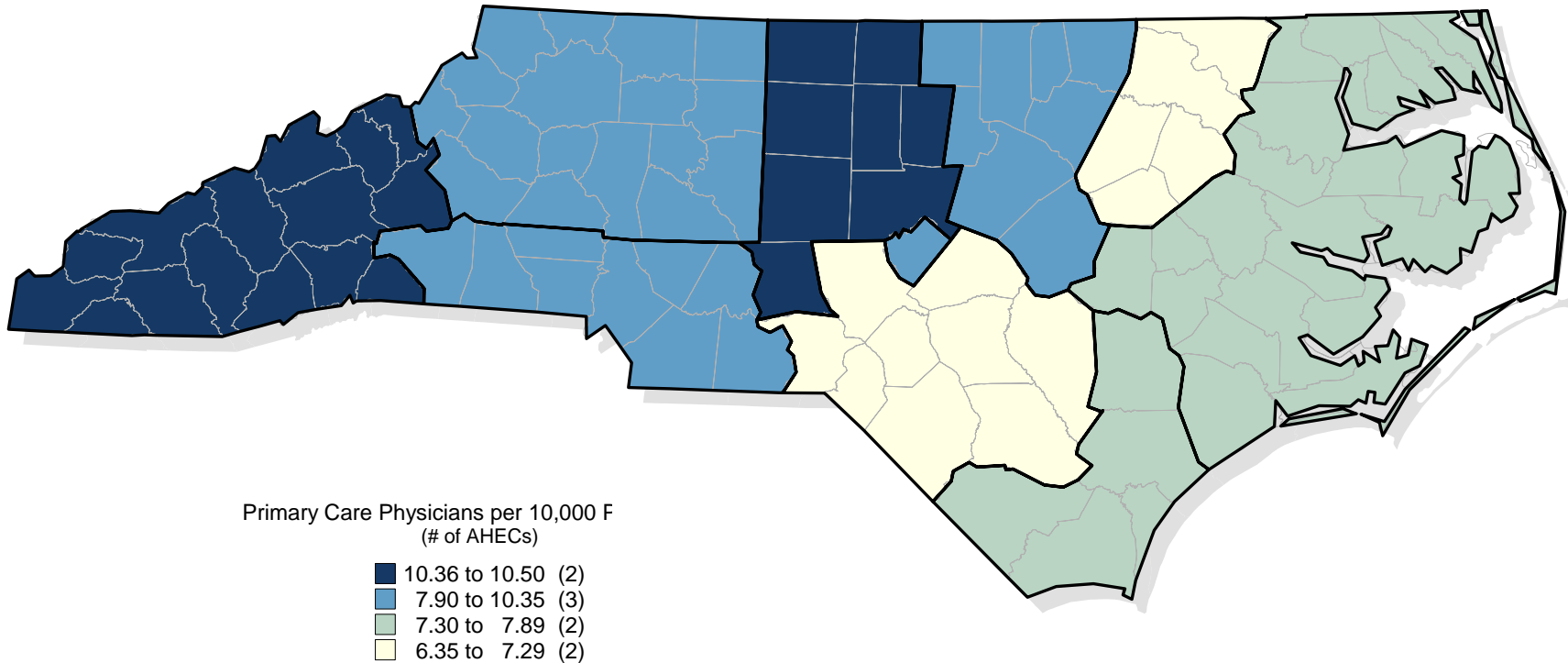
- 9.17 to 33.12 (19)
- 7.41 to 9.16 (20)
- 5.48 to 7.40 (20)
- 4.28 to 5.47 (20)
- 1.69 to 4.27 (21)


 AHEC Region Boundary

Source: North Carolina Health Professions Data System,  
with data derived from the North Carolina Medical Board, 2004.  
Produced by: North Carolina Health Professions Data System, and the  
Southeast Regional Center for Health Workforce Studies, Cecil G. Sheps  
Center for Health Services Research, University of North Carolina at Chapel Hill.

\*Primary Care Physicians include active or unknown activity status, instate,  
nonfederal, non-resident-in-training MDs and DOs indicating a primary specialty  
of Family Practice, General Practice, Internal Medicine, Ob/Gyn or Pediatrics.

## Primary Care Physicians per 10,000 Population North Carolina AHEC Regions, 2004

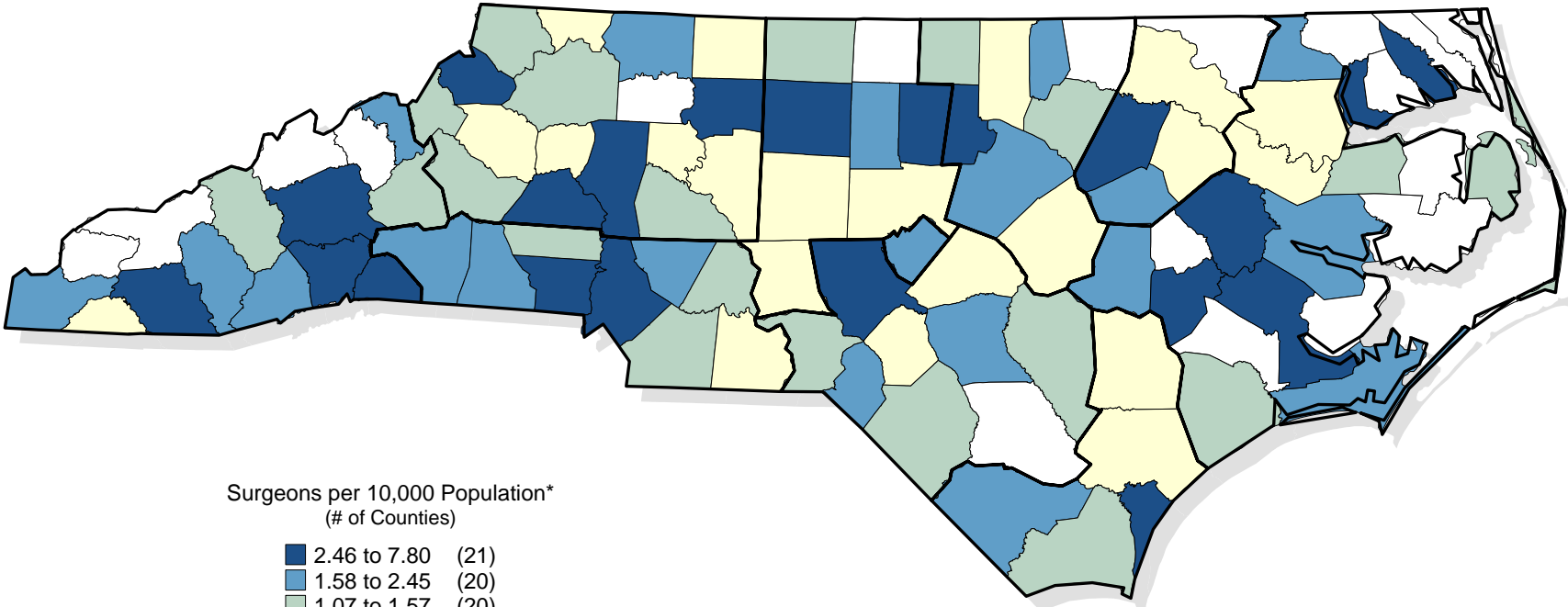


 County Boundary

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# Surgeons per 10,000 Population North Carolina, 2004



Surgeons per 10,000 Population\*  
(# of Counties)

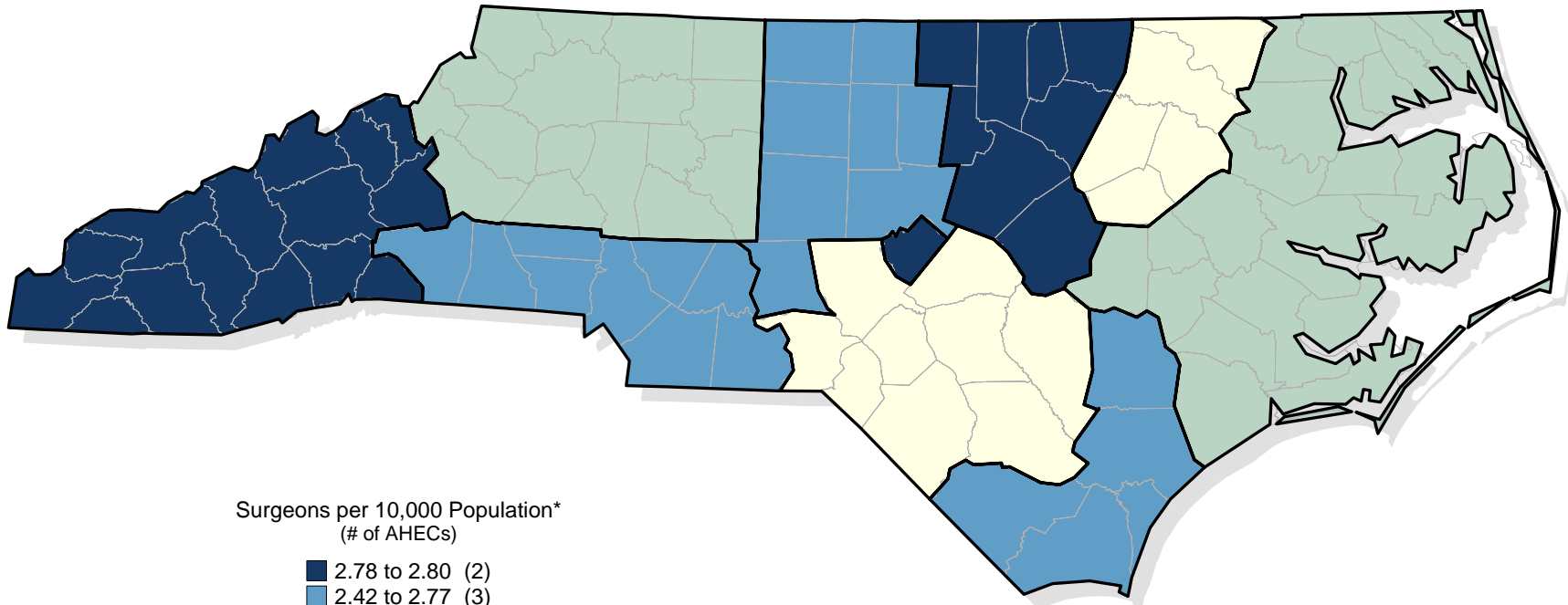
- 2.46 to 7.80 (21)
- 1.58 to 2.45 (20)
- 1.07 to 1.57 (20)
- 0.01 to 1.06 (21)
- No Surgeons (18)

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instate, nonfederal, non-resident-in-training MDs and DOs. Surgeons  
include physicians who reported a primary specialty in any type of surgery.

## Surgeons per 10,000 Population North Carolina AHEC Regions, 2004



Surgeons per 10,000 Population\*  
(# of AHECs)

- 2.78 to 2.80 (2)
- 2.42 to 2.77 (3)
- 2.00 to 2.41 (2)
- 1.56 to 1.99 (2)

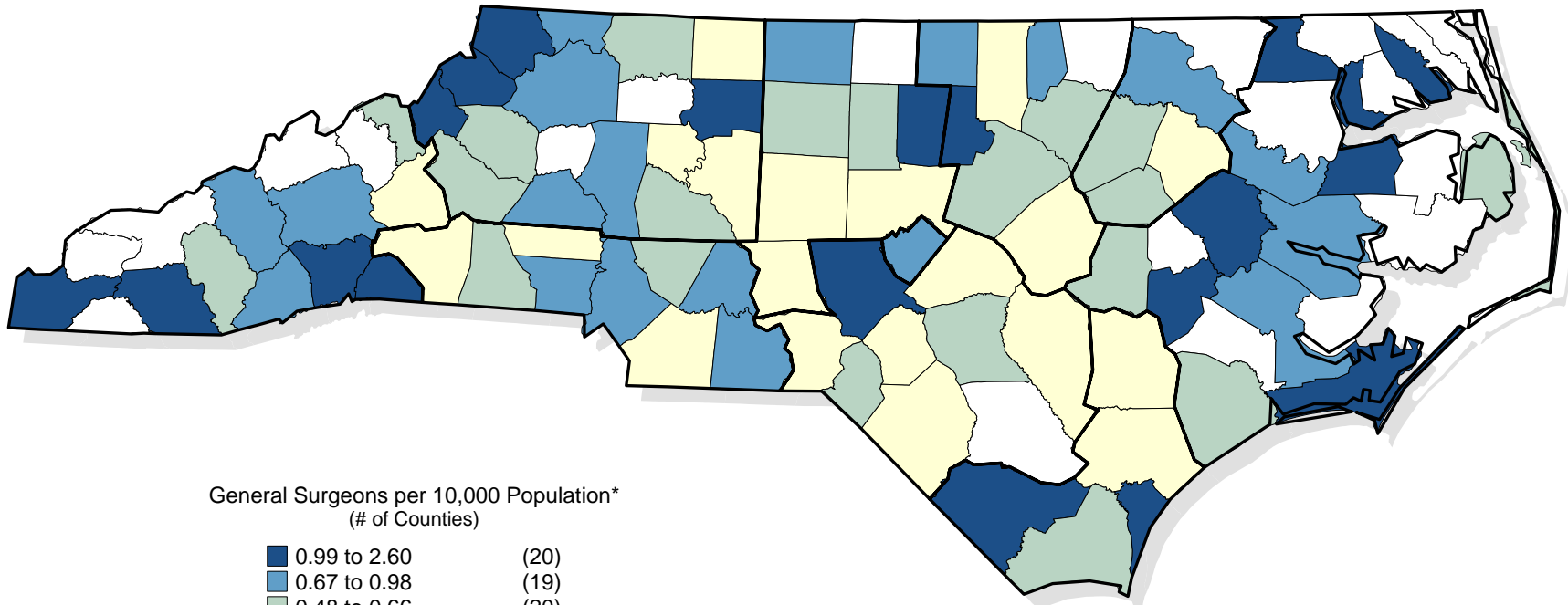
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## General Surgeons per 10,000 Population North Carolina, 2004



General Surgeons per 10,000 Population\*  
(# of Counties)

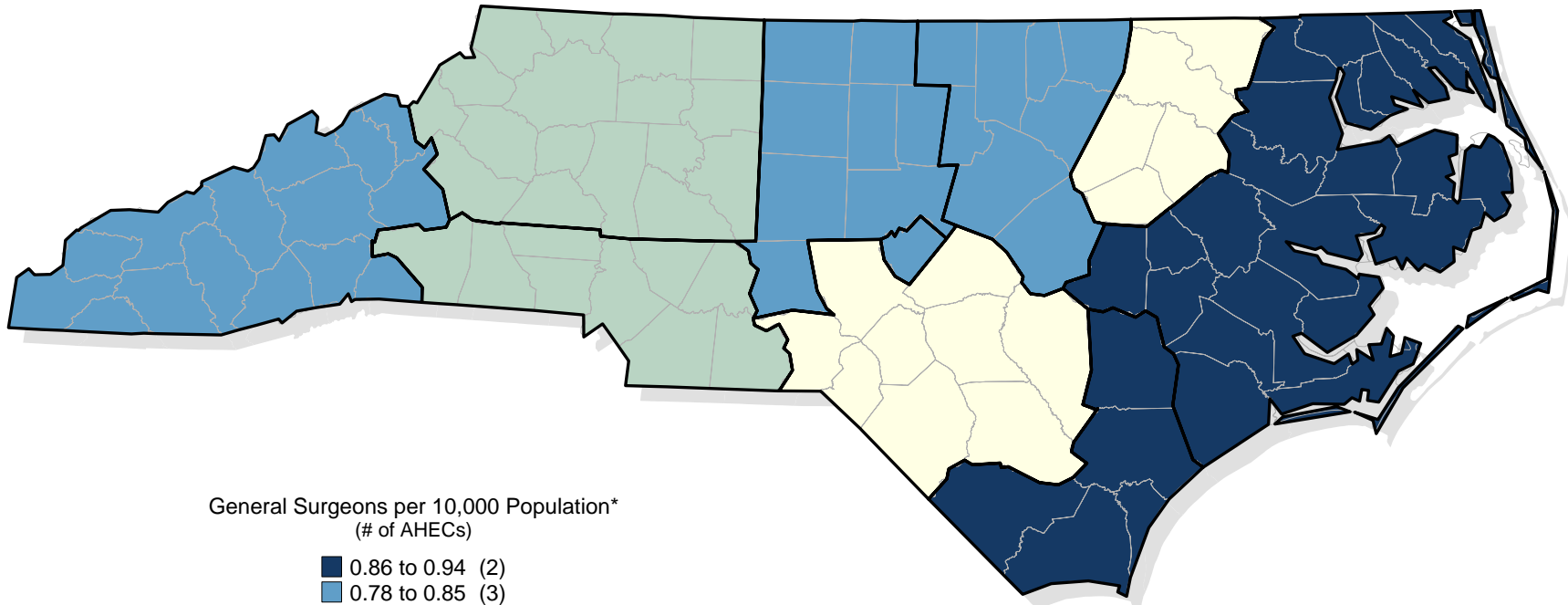
|  |                     |      |
|--|---------------------|------|
|  | 0.99 to 2.60        | (20) |
|  | 0.67 to 0.98        | (19) |
|  | 0.48 to 0.66        | (20) |
|  | 0.01 to 0.47        | (20) |
|  | No General Surgeons | (21) |

AHEC Region Boundary

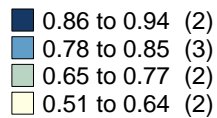
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include physicians who reported a primary specialty in general surgery.

## General Surgeons per 10,000 Population North Carolina AHEC Regions, 2004



General Surgeons per 10,000 Population\*  
(# of AHECs)

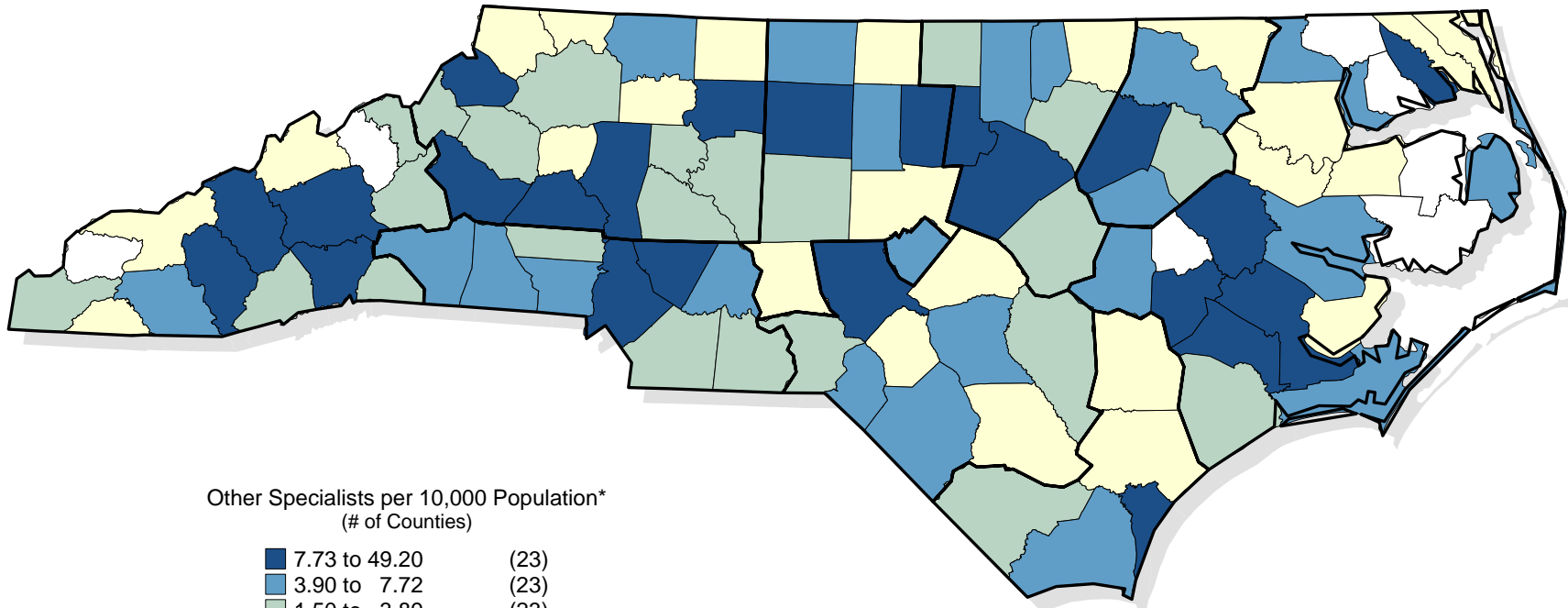



 County Boundary

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## Other Physician Specialists per 10,000 Population North Carolina, 2004

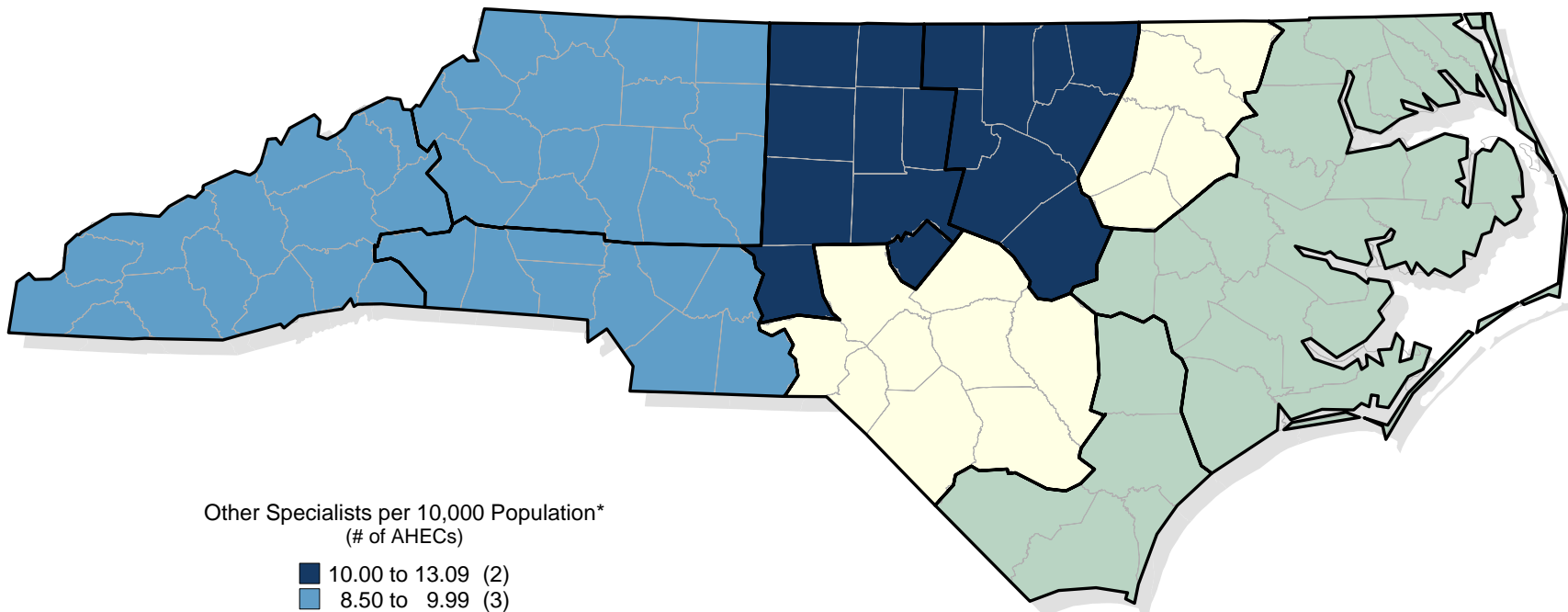


 AHEC Region Boundary

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Other specialists include physicians who reported something other  
than primary specialties in primary care or any type of surgery.

## Other Physician Specialists per 10,000 Population North Carolina AHEC Regions, 2004



Other Specialists per 10,000 Population\*  
(# of AHECs)

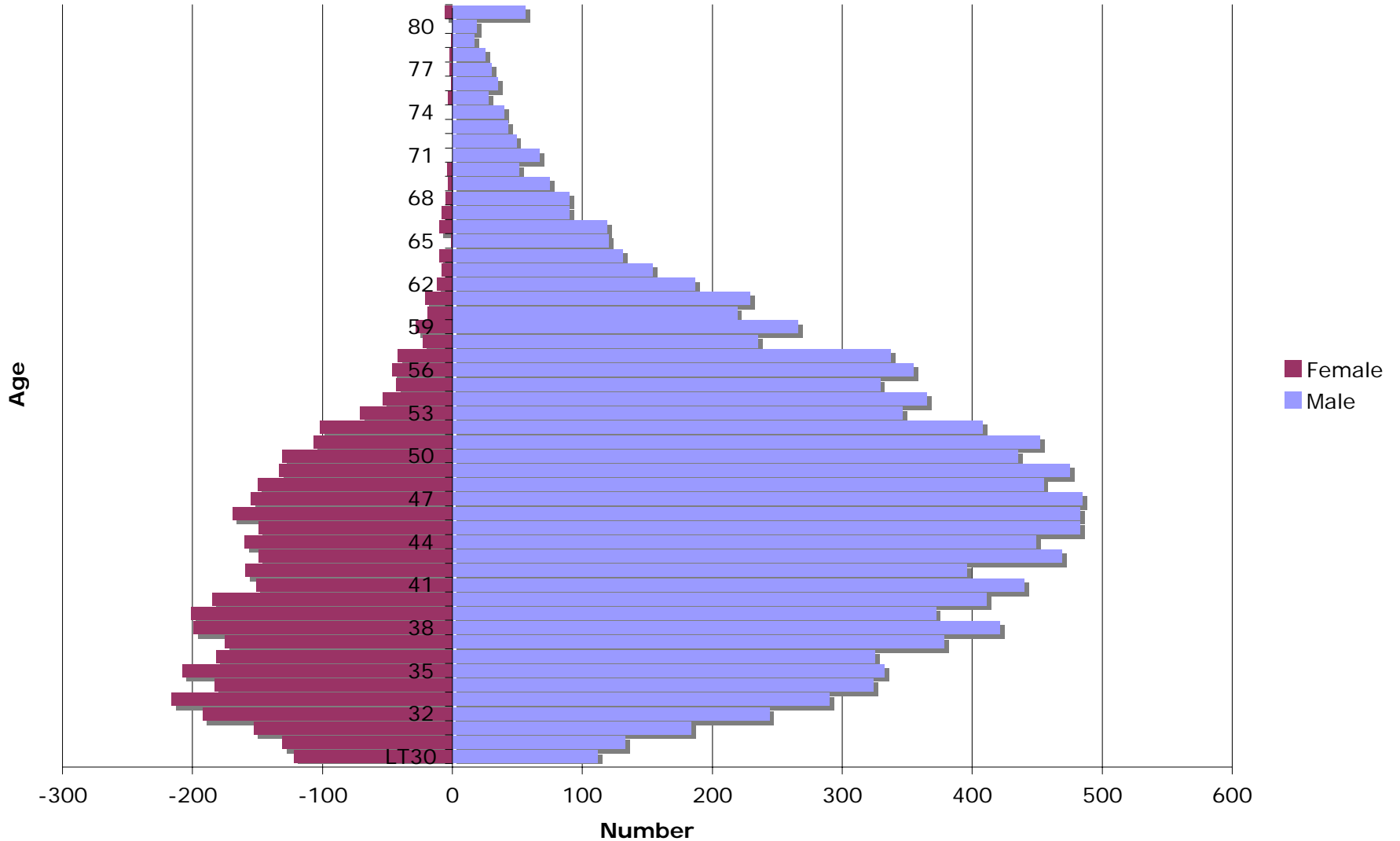
- 10.00 to 13.09 (2)
- 8.50 to 9.99 (3)
- 7.00 to 8.49 (2)
- 4.98 to 6.99 (2)

County Boundary

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# Age-Gender, NC Physicians, 2004



# What Is to Be Done?

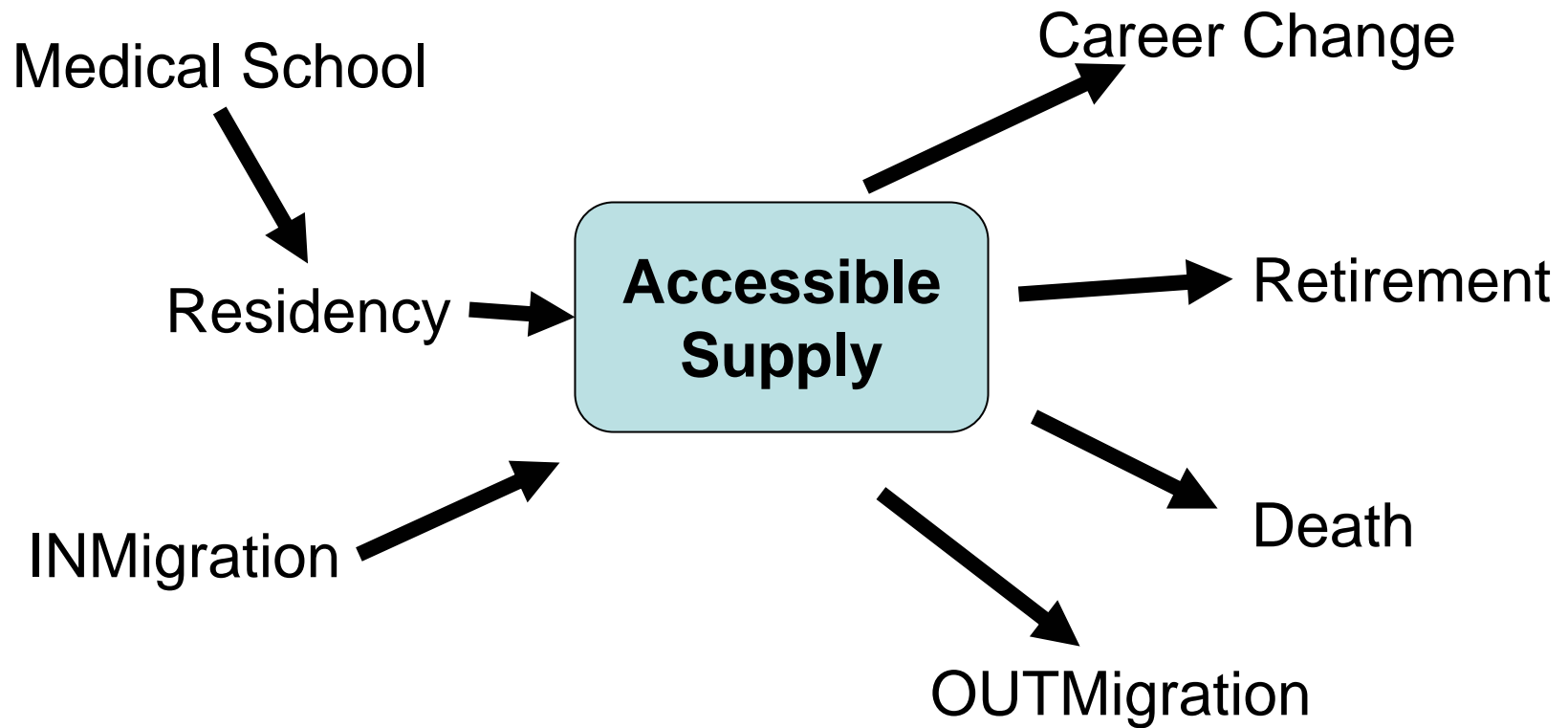
- ❖ **Factors in Supply Equation**
- ❖ **Options for Change**
- ❖ **Potential Effects**

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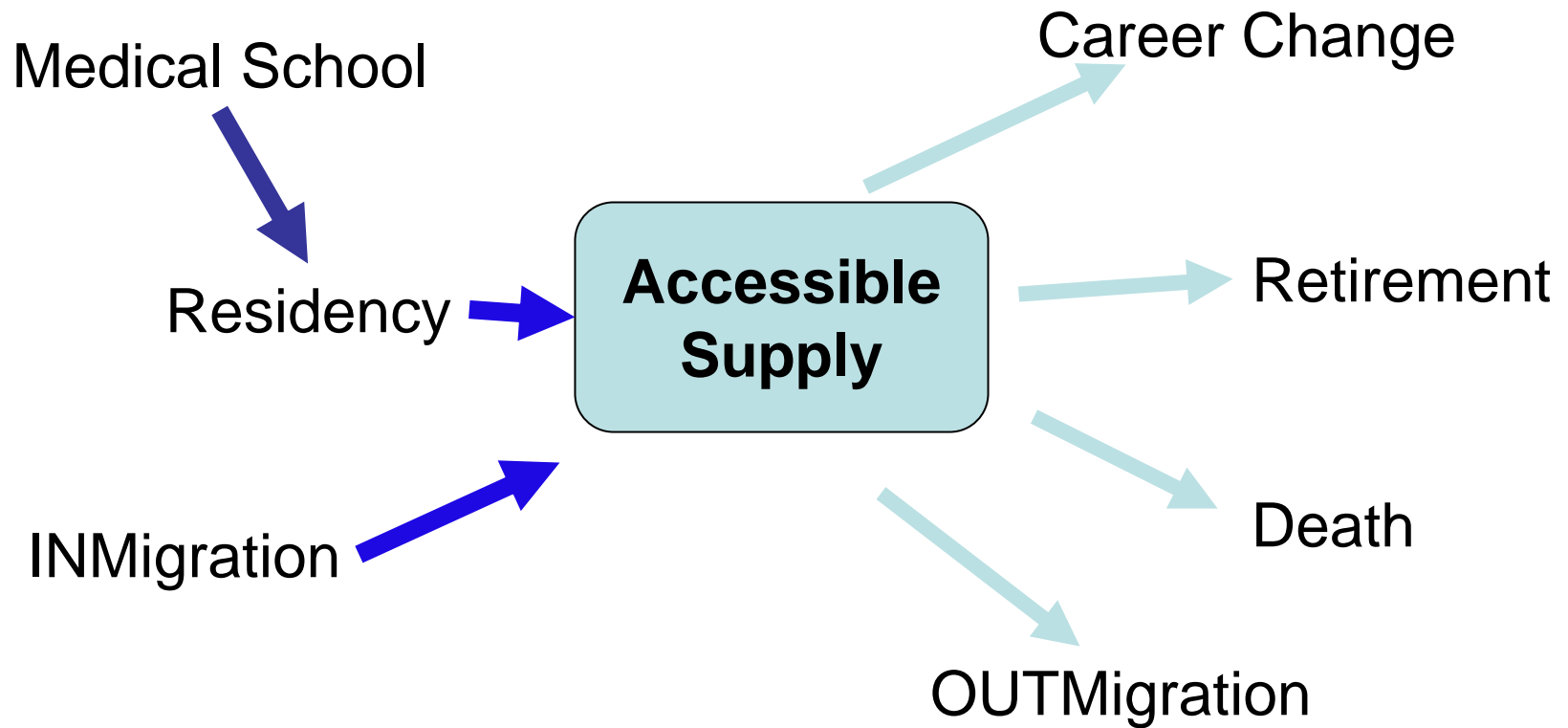
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*Tolstoy and Cherneysevsky,  
who asked the same question...*

# Factors in the Supply

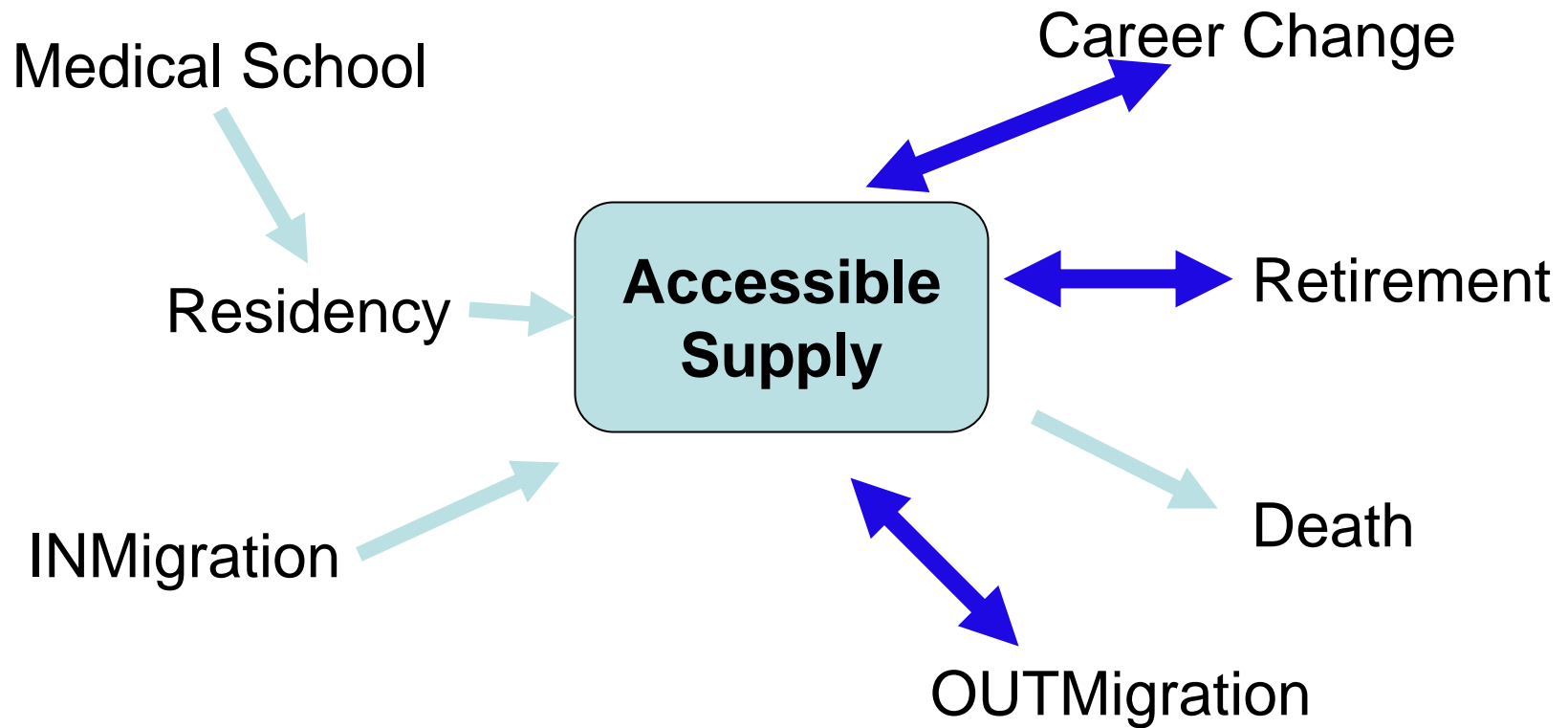


# Increase Entry the Supply





# Reduce Exit from the Supply



# Yield from NC Suppliers

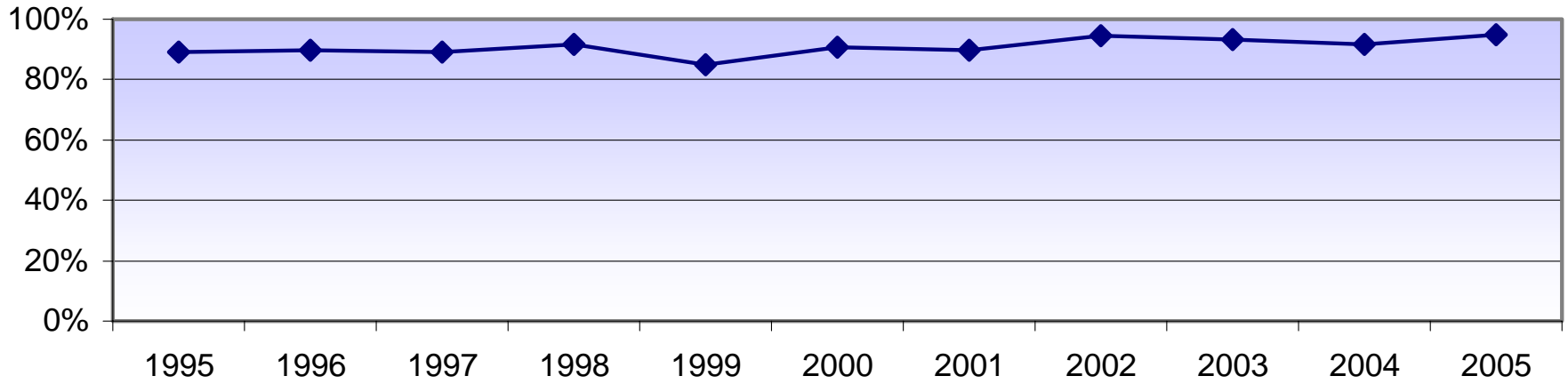
## ❖ NC Medical Schools 40 year trend

- 39.3% of graduates
- Current annual graduates 441
- *Doubling* the number yields +171, after 7 years

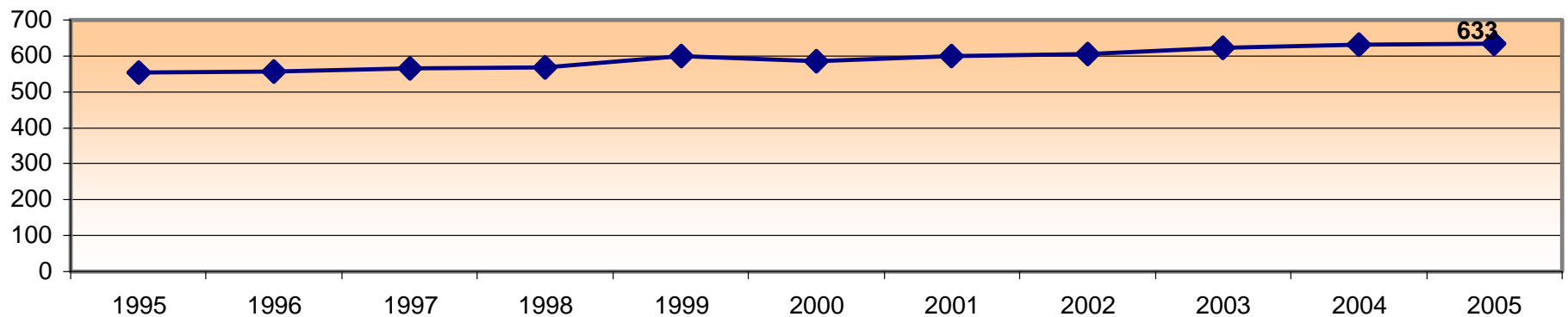
## ❖ NC Residencies 40 year trend

- 49% of residents
- Current total Residents 2,640, 633 GY1
- *Doubling* the number yields +316, after 3,5 yrs

## GY-1 Residency Fill Rate in North Carolina, 1995 - 2005



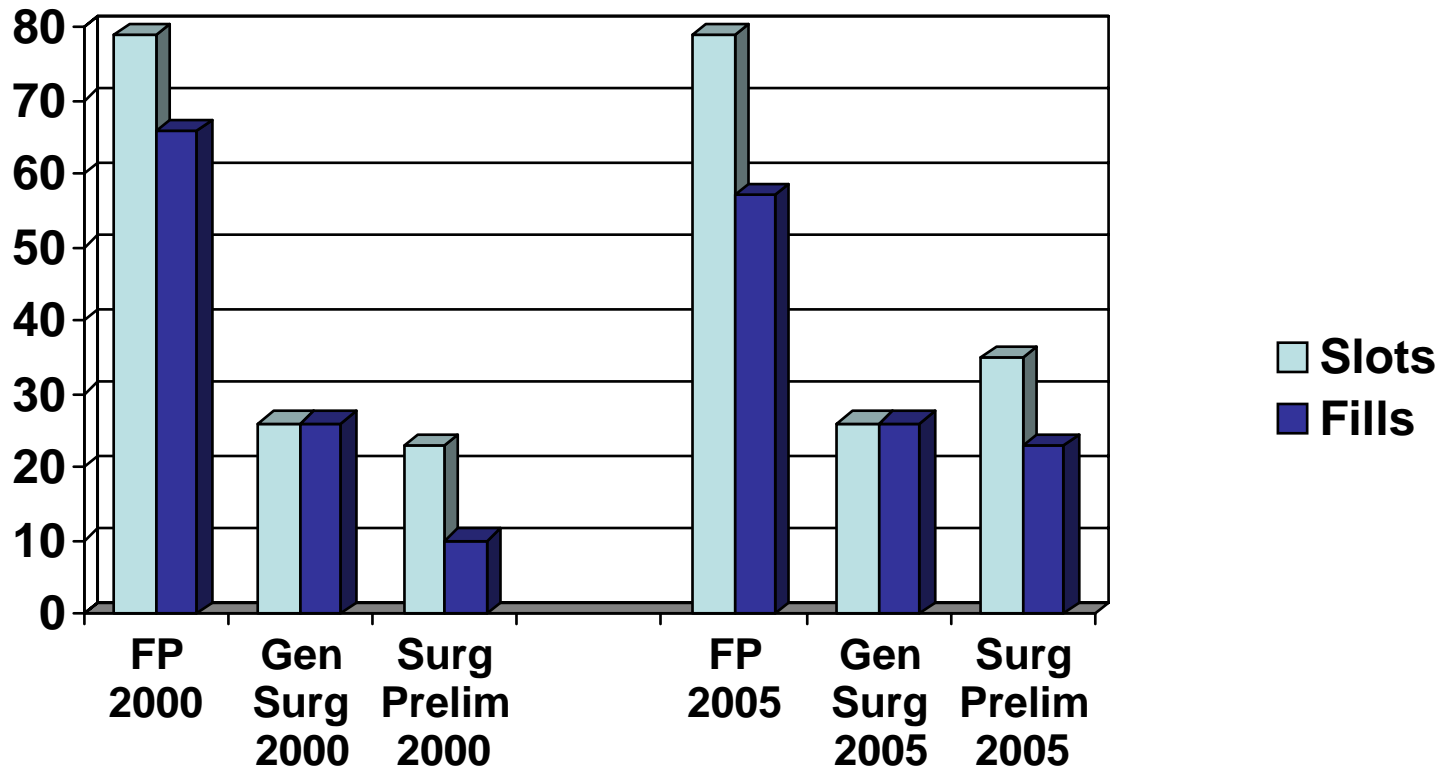
## Number of GY-1 Residencies in North Carolina, 1995 - 2005



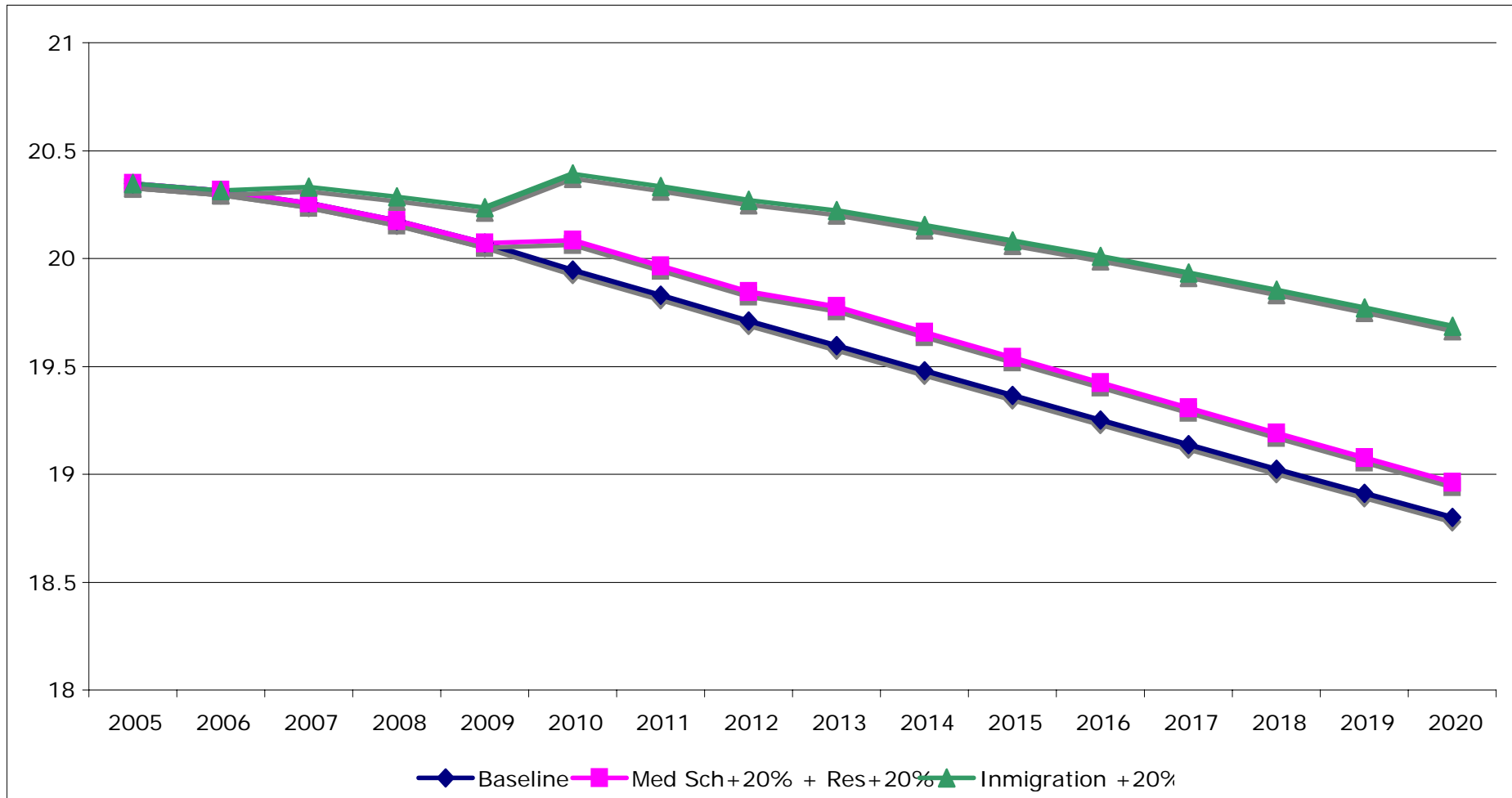
# Residency Fill Rates, 2005

- ❖ **Total GY-1 Residents 633, matched 601 = 94.9%**
- ❖ **Family Practice, 79 slots, 57 matched = 72%**
- ❖ **General Surgery, 26/26 = 100%**
- ❖ **Surgery Prelim, 23/35 = 65.7%**

# 2000-2005 NC Residency Trends: Family Practice, General Surgery, Surgery-Prelim



# Projection of supply w/ 20% increase Med School, Residency, In-migration physicians/10 000



# **State/Federal Initiatives**

- ❖ Kentucky-study shows need for 600 primary care physicians**
- ❖ Texas ,Georgia: Study/Analysis Groups**
- ❖ J-1 Visa program extended, expanded PL 108-441**
- ❖ Medical Schools Expanding Classes**

## Med Schools with Largest Increases in 1st Year Enrollment

| School / State        | 1st Year<br>2004 | 1st Year<br>2005 | %<br>Increase |
|-----------------------|------------------|------------------|---------------|
| FL State              | 58               | 80               | 37.9%         |
| Brown, RI             | 61               | 73               | 19.7%         |
| Marshall, WV          | 52               | 60               | 15.4%         |
| Miami, FL             | 160              | 182              | 13.8%         |
| Northeastern Ohio     | 106              | 120              | 13.2%         |
| Missouri, Kansas City | 85               | 95               | 11.8%         |
| Jefferson, PA         | 228              | 254              | 11.4%         |



# NCSL Checklist

- ❖ **Focused admission students from rural areas**
- ❖ **Stipend, preceptorship support for practice in underserved areas**
- ❖ **Recruitment/placement programs**
- ❖ **Practice development subsidies**
- ❖ **Malpractice Premium Subsidies**
- ❖ **Tax Credits for practice in underserved areas**
- ❖ ***Locum tenens* support**
- ❖ **Malpractice immunity for volunteer work**
- ❖ **Payment bonuses by Medicaid, State Employees carrier**
- ❖ **Medicaid telemedicine payments**