Trends in Physician Supply in North Carolina

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Goals for the Presentation

- Highlight emerging trends in the supply of physicians, nurse practitioners, and physician assistants in the US and NC.
- Closely examine the characteristics of physicians who are new to practice in NC.
- Estimate the future supply of physicians for the NC under optional scenarios.
- Review some medical workforce policy options in other states.
Main Message: The Supply of Physicians Is Growing *Slower than Population*

- National estimates project an emerging shortage.
- NC reflects these trends.
- This may cause access problems in North Carolina in the near future.
NC Population Has Grown and slightly faster than the US

North Carolina 11th in Population total, 9th in growth rate (4 years)

Source: US Census Bureau, NC State Demographer Popworksheet.xls
MD Growth Has Slowed to below Population Growth

- NC Primary Care MDs
- NC Population
- US Population
- NC Total MDs
National Context

- Recognition of potential shortage by national groups:
  - American Association of Medical Colleges (AAMC) reversed position in 2005 to say there is a shortage
  - Council on Graduate Medical Education reversed position in 2004 to say there may be a shortage coming
  - Family Physicians (AAFP) debating the issue
National Context

- Very slow Allopathic medical school growth
  - Florida State only new allopathic school
  - Others considered in TX, AZ, FL

- Growth in small Osteopathic Schools
  - 2 new schools in Florida 2004-5
    - Lake Erie, 300 students in its 2nd year
    - Northern Florida announces plans
  - Nevada branch of Touro (CA) Osteopathic Medical School Philadelphia College of Osteopathic Medicine in Atlanta opened 2005
  - Kentucky (Pikeville School) opens in a consortium
  - Virginia School (Edward Via) associated with Virginia Tech Opens 2005.
Doctors are Trained in Two Steps

- Medical School (4 years) → Residency (3-7 years)

- 75% of US Doctor Supply comes from US Medical Schools via US Residency
- 25% comes from Foreign Medical Schools, via US Residencies
US Medical Stu
Enrollment

General Picture

A Growth trend that is slowing

Medical School and Residency Numbers “Flat”

......

An emerging shortage?
What is happening in North Carolina?
Pathways into Practice North Carolina

- From Medical Schools
  - In North Carolina
  - Other US and Canadian Schools
  - International Medical Schools

- From Residency Programs
  - In North Carolina
  - In other US states and Canada

- In-migration from other States
Newly Licensed Patient Care Physicians in NC 1998-2004

Source: NC Health Professions Data System, Sheps Center from data Provided by the North Carolina Medical Board
Newly Licensed Patient Care

Primary Care Physicians in North Carolina

Source: NC Health Professions Data System, Sheps Center from data Provided by the North Carolina Medical Board
Newly Licensed Physicians were….

- More likely to be female
  - 34% of new licensees are female vs. 25% of all current, active NC physicians.

- More likely to be minority
  - 26% of new licensees are minority vs. 18% of all physicians.

- Younger
  - Average age of new licensees is 38.5 years vs. 46.4 years for all physicians.
Average Age of All and New Physicians Increasing Slowly

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean Age All MDs</th>
<th>Mean Age New MDs</th>
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<tbody>
<tr>
<td>1998</td>
<td>45.4</td>
<td>34.9</td>
</tr>
<tr>
<td>1999</td>
<td>45.3</td>
<td>34.9</td>
</tr>
<tr>
<td>2000</td>
<td>45.6</td>
<td>35.4</td>
</tr>
<tr>
<td>2001</td>
<td>45.6</td>
<td>35.2</td>
</tr>
<tr>
<td>2002</td>
<td>45.7</td>
<td>35.5</td>
</tr>
<tr>
<td>2003</td>
<td>45.98</td>
<td>37.7</td>
</tr>
<tr>
<td>2004</td>
<td>46.4</td>
<td>38.5</td>
</tr>
</tbody>
</table>

Source: NC Health Professions Data System, Sheps Center from data Provided by the North Carolina Medical Board
Figures include active, instate, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 1980.
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 Medical Board, 1980.
Figures include active, instate, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 1990. 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 Medical Board, 1990.
Note: There were three physicians with missing age.

Figures include active, instate, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 2000. 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 Medical Board, 2000.
Figures include active, instate, nonfederal, non-resident-in-training physicians licensed in North Carolina as of October 31, 2004. 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 Medical Board, 2004.
Gender Converging Slowly for New MDs

Source: NC Health Professions Data System, Sheps Center from data Provided by the North Carolina Medical Board
Many, but Not Most New Patient Care MDs Go to NC Medical Schools
Majority of New Patient Care MDs Do Residency in NC
Osteopaths, relatively few, but growing fast in numbers

- Number of DOs practicing in NC: 379
- 2.2% of Total Physician Supply
- Growth rate of >10% per year
# Trends in Physicians Delivering Babies

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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<tbody>
<tr>
<td><strong>OBGs</strong></td>
<td>919</td>
<td>937</td>
<td>954</td>
<td>960</td>
<td>981</td>
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<tr>
<td><strong>OBGs Delivering</strong></td>
<td>651</td>
<td>701</td>
<td>742</td>
<td>750</td>
<td>748</td>
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<tr>
<td><strong>% OBGs</strong></td>
<td>70.8%</td>
<td>74.8%</td>
<td>77.8%</td>
<td>78.1%</td>
<td>76.2%</td>
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<tr>
<td><strong>FPs</strong></td>
<td>2,173</td>
<td>2,224</td>
<td>2,293</td>
<td>2,327</td>
<td>2,040</td>
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<tr>
<td><strong>FPs Delivering</strong></td>
<td>212</td>
<td>227</td>
<td>228</td>
<td>232</td>
<td>205</td>
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<tr>
<td><strong>% FPs</strong></td>
<td>9.8%</td>
<td>10.2%</td>
<td>9.9%</td>
<td>9.9%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Delivery Dynamics

- Of the 101 physicians who stopped providing obstetric deliveries between 2003 and 2004, 56 (56%) were Family Docs.
- This is a disproportionate share since family docs are just 13% of total physicians and 10% of physicians delivering babies.
IMGS—slight Increase; NC IMGs Stable in Recent Years.

Source: NC Health Professions Data System, Sheps Center.
As reported on NC Medical Board license renewal and registration
<table>
<thead>
<tr>
<th>Year</th>
<th>Supply</th>
<th>New to file</th>
<th>Left File</th>
<th>Total</th>
<th>Net gain</th>
</tr>
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<tbody>
<tr>
<td>2001</td>
<td>16,392</td>
<td>1,681</td>
<td>1,304</td>
<td>16,769</td>
<td>377</td>
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<tr>
<td></td>
<td></td>
<td>(status change 480 newly licensed 1201)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>16,769</td>
<td>1,563</td>
<td>1,242</td>
<td>17,090</td>
<td>384</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(status change 508 newly licensed 1055)</td>
<td></td>
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</tr>
<tr>
<td>2003</td>
<td>17,090</td>
<td>1,413</td>
<td>1,163</td>
<td>17,340</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(status change 480 newly licensed 933)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NC Health Professions Data System, Sheps Center from data provided by the North Carolina Medical Board
What do we know about those who left North Carolina or Practice?

- Between 2002 and 2003
  - 143 physicians retired from practice. Average retirement age was 66 years of age.
  - 90% of retiring physicians were men. Only 2% did obstetric deliveries.
  - 303 physicians moved out of state but maintained an active license
  - 138 went inactive
  - 658 dropped out of physician file (presumably moved)

- 51% of the 138 physicians who went inactive were women. The average age of inactive females was 42 compared to 59 for inactive males.
Dynamics and Change

- The supply is dynamic with up to 20% of all physicians moving either into or out of active practice in NC.
- Many physicians move into and out of active practice during their careers.
- The “net” supply is a “snapshot” of change.
- There are other practitioners who can do what doctors do — Nurse Practitioners and Physician Assistants.
Cumulative Growth of Nurse Practitioners, Physician Assistants and Physicians, North Carolina, 1990-2004

Cumulative rate of growth since 1990

Year

Nurse Practitioners 231%
Physician Assistants 140%
Physicians 26.3%
Questions

- Do NPs and PAs fill the gap left by the slowdown in physician growth?
- Do NPs and PAs expand demand for physician services?
- Do NPs and Pas meet different patient care needs than physicians?
The Geography of Physician Supply in NC

- Very uneven distribution of MDs in North Carolina
- Selected areas have recognized “shortages” designated by the federal government as Primary care Health Professional Shortage Areas (HPSAs)
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)

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.
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)

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.

*Physicians included are active or have unknown activity status, instate, nonfederal, non-resident-in-training MDs and DOs. Surgeons include physicians who reported a primary specialty in any type of surgery.
Other Physician Specialists per 10,000 Population
North Carolina, 2004

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

- 7.73 to 49.20  (23)
- 3.90 to 7.72  (23)
- 1.50 to 3.89  (23)
- 0.01 to 1.49  (24)
- No Other Specialists  (7)

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.

*Physicians included are active or have unknown activity status, instate, nonfederal, non-resident-in-training MDs and DOs. Other specialists include physicians who reported something other than primary specialties in primary care or any type of surgery.
Percent Change in Physicians per 10,000 Population
North Carolina, 1995-1999

Percent Change, 1995-1999
(# of Counties)

- 20.0% or More (48)
- 10.0% to 19.9% (19)
- 0.01% to 9.9% (19)
- No Active Physicians in 1994 (1)
- -0.01% to -9.9% (8)
- -10.0% to -19.9% (0)
- -20.0% or More (5)

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 Medical Board, 1995-2004.

*There were no active physicians in 1995; there were 3 active physicians in 1999. Counts include active, instate, nonfederal, non-resident-in-training physicians.
Percent Change in Physicians per 10,000 Population
North Carolina, 1999-2004

Percent Change, 1999-2004
(# of Counties)
- 20.0% or More (10)
- 10.0% to 19.9% (19)
- 0.01% to 9.9% (28)
- -0.01% to -9.9% (20)
- -10.0% to -19.9% (10)
- -20% or More (13)

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 Medical Board, 1995-2004. Counts include active, instate, nonfederal, non-resident-in-training physicians.
Percent Change, 1995-1999
(# of Counties)

- 20.0% or More (44)
- 10.0% to 19.9% (14)
- 0.01% to 9.9% (20)
- No Active Physicians in 1995 (1)
- -0.01% to -9.9% (11)
- -10.0% to -19.9% (5)
- -20.0% or More (5)

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 Medical Board, 1995-2004.

*There were no active physicians in 1995; there was 1 active physician in 1999.
Counts include active, instate, nonfederal, non-resident-in-training physicians who indicated a primary specialty of family practice, internal medicine, general practice, OB/GYN or pediatrics.
Percent Change in Primary Care Physicians per 10,000 Population
North Carolina, 1999-2004

Percent Change, 1999-2004
(#) of Counties

- 20.0% or More (24)
- 10.0% to 19.9% (22)
- 0.01% to 9.9% (17)
- -0.01% to -9.9% (21)
- -10.0% to -19.9% (4)
- -20.0% or More (12)

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 Medical Board, 1995-2004.

Counts include active, instate, nonfederal, non-resident-in-training physicians who indicated a primary specialty of family practice, internal medicine, general practice, OB/GYN or pediatrics.
Persistent HPSA Designation Status
(# of Counties)

- Whole County is PHPSA (21)
- Part of County is PHPSA (23)
- Not HPSA Designated (56)

Persistent HPSAs are those designated as HPSAs by the Health Resources and Services Administration (HRSA) from 1993 to 1997, or in 6 of the last 7 releases of HPSA definition.

Produced By: North Carolina Rural Health Research and Policy Analysis Center, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
How to Change the Future Supply of Physicians
Factors in the Supply

Accessible Supply

Medical School

Residency

INMigration

Career Change

Retirement

Death

OUTMigration
Increase Entry the Supply

Accessible Supply

Medical School
Residency
INMigation

Career Change
Retirement
Death
OUTMigration
Reduce Exit from the Supply

Accessible Supply

Medical School
Residency
INMigration
Career Change
Retirement
Death
OUTMigration
NC Medical Schools, IN-State Yield
(percent of graduates in active practice, in North Carolina)

- Bowman-Gray-WFU.. 39.4%
- Duke.................... 24.1%
- East Carolina......... 59.0%
- UNC-Chapel Hill....... 48.7%
Yield from NC Suppliers

- **NC Medical Schools 40 year trend:**
  - 39.3% of graduates practice in NC
  - Current annual graduates: 441
  - 2X graduates yields net increase of 171, *after 7 years*

- **NC Residencies 40 year trend**
  - 42% of those trained in NC stay in NC
  - Current total Residents 2,640; 633 are in their 1st year
  - 2X residencies yields net increase of 316, *after 3.5 yrs*
Birth States of NC Physicians
n=17,000

Where Graduates of NC Medical Schools Practice

2003 data, n=14,400

Where NC Physicians went to Medical School

2003 data n = 17,090

Where physicians who trained in NC Residencies Practice

2003 data n=14,591

Where NC Physicians Received Specialty Training

n=17,090

National - State Policy Context

- President cuts Title VII, AHEC from Budget
- Congress not mobilized to support training programs
- States facing need to expand residencies
  - Utah: University-Intermountain System Consortium to add state-funded residencies
State/Federal Initiatives

- Kentucky-study shows need for 600 primary care physicians
- Texas, Georgia, Maryland: Study/Analysis Groups, shortages noted
- J-1 Visa program extended, expanded PL 108-441.
- Medical Schools Expanding Classes
Projections of Future Supply
Focus on Short Term Future Population “Crosses” Physician Growth
Projection with 20% increase in Med. School, Residency, In-migration physicians/10,000