The Status of Health Professions Diversity in North Carolina

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North Carolina Health Professions Data System

NC Health Professions Diversity Conference
Greensboro, North Carolina
August 29, 2012
Presentation Overview

- Diversity and emerging workforce shortages
- Where do the data come from and what are strengths/limitations?
- What does health workforce diversity currently look like in the state?
- How has workforce diversity changed over time?
- Where are NC’s diverse practitioners educated?
- Data reflections: What does it all mean?
Diversity and Workforce Shortages

- Emerging workforce shortages
- Are we adequately accessing a talented pool of workers?
- Is there upward education and job mobility?
- Transformed health care system emphasizes population health, reducing health disparities, and community-based models of care. Can we do this without increasing workforce diversity?
- What is the role of AHEC and other partners?
Data Strengths

• We have data!
• Derived from licensure files—*not a survey*
• Sample=licensed, active, non-federal practitioners in NC
• 30- years of data allow us to:
  – Monitor changes over time
  – Combine data on race/ethnicity with data on education and geographic characteristics
• You, too, can access these data and have as much fun as we do crunching numbers
Data Challenges

- Data are self-reported
- Quality of race data variable over years, generally improved in recent years
- Race questions asked differently by different Boards
- Increasing number of health professionals fall into more than one category
- How do we know how we’re doing? National data are limited but we benchmark to:
  - Previous years
  - North Carolina’s population
2009 Snapshots
Race/Ethnicity of Practitioners Falls Short of Matching Population Diversity

Diversity of North Carolina’s Population vs. Diversity of Selected Health Professions, 2009

% nonwhite

- Other/Multiracial
- Hispanic/Latino
- African American/Black
- Asian/Pacific Islander
- American Indian/Alaska Native
- White
Doctors More Diverse than Physician Assistants, and Primary Care Physicians More Diverse than Surgeons

Physician & PA Diversity vs. State Diversity, North Carolina, 2009

NC DIVERSITY: n=9,045,705
All Physicians: n=19518
Surgeons: n=1953
PCP: n=8423
PA: n=3325

% nonwhite:
- Other/Multiracial
- Hispanic
- African American/Black
- Asian/Pacific Islander
- American Indian/Alaska Native
- White
Most Nurses Less Diverse than Physicians but Licensed Practical Nurses Nearly Match Population Diversity

APRN, RN & LPN Diversity vs. State Diversity, North Carolina, 2009

- NC DIVERSITY: 67%
- CNM: 33%
- CRNA: 90%
- NP: 94%
- RN: 89%
- LPN: 11%
- % nonwhite: 16%

Other/Multiracial
Hispanic
African American/Black
Asian/Pacific Islander
American Indian/Alaska Native
White

n=9,045,705, n=220, n=1,851, n=3,190, n=90,487, n=17,925
Assistant Professions in Allied Health
Surprisingly Not Diverse

Allied Health Diversity vs. State Diversity, North Carolina, 2009

<table>
<thead>
<tr>
<th>Profession</th>
<th>Other/Multiracial</th>
<th>Hispanic</th>
<th>African American/Black</th>
<th>Asian/Pacific Islander</th>
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<th>White</th>
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<tbody>
<tr>
<td>NC DIVERSITY</td>
<td>13%</td>
<td>12%</td>
<td>11%</td>
<td>11%</td>
<td>17%</td>
<td>67%</td>
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<td>PT</td>
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n=9,045,705 (NC DIVERSITY), n=4,738 (PT), n=2,183 (PTA), n=2,343 (OT), n=1,057 (OTA), n=3,828 (RT)
Dental Hygienists Less Diverse than Dentists or Pharmacists
## NC Health Professions Diversity Scorecard, 2009

### Legend
- **Green** = above state %
- **Orange** = below state average
- **Blue** = equivalent to state average

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<thead>
<tr>
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<th>PT</th>
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<td><strong>African American/Black</strong></td>
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<td><strong>Hispanic</strong></td>
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Visualizing the Data in a Different Way

What is the ratio of practitioners by race to 10,000 population of the SAME race/ethnicity?
Asians Overrepresented and African Americans, Native Americans, Hispanics Underrepresented Among Physicians

Ratio of Physicians per 10K Pop by Same Race/Ethnicity, North Carolina, 2009

- Asian/Pacific Islander: 94
- White: 25
- North Carolina: 22
- American Indian/Alaska Native: 11
- African American/Black: 8
- Hispanic/Latino: 6
Same Pattern for Pharmacists

Ratio of Pharmacists per 10K Pop by Same Race/Ethnicity, North Carolina, 2009

- Asian/Pacific Islander: 29
- White: 12
- North Carolina: 10
- American Indian/Alaska Native: 4
- Multiracial/Other: 2
- African American/Black: 2
- Hispanic/Latino: 1
... and Dentists

Ratio of Dentists per 10K Pop by Same Race/Ethnicity, North Carolina, 2009

Asian/Pacific Islander: 10
White: 6
North Carolina: 5
American Indian/Alaska Native: 2
African American/Black: 2
Hispanic/Latino: 1

Ratio per 10K Pop, Same Race/Ethnicity
American Indians, African Americans and Hispanics are Underrepresented Among RNs

Ratio of Registered Nurses per 10K Pop of Same Race/Ethnicity, North Carolina, 2009

- Asian/Pacific Islander: 128
- White: 125
- North Carolina: 101
- American Indian/Alaska Native: 77
- African American/Black: 49
- Hispanic/Latino: 13

Ratio per 10K Pop, Same Race/Ethnicity
By Contrast, LPNs Have Higher Ratios of American Indian and African Americans than Whites

Ratio of LPNs per 10K Pop of Same Race/Ethnicity, North Carolina, 2009

- American Indian/Alaska Native: 25
- African American/African: 25
- White: 20
- North Carolina: 20
- Asian/Pacific Islander: 9
- Hispanic/Latino: 3

By Contrast, LPNs Have Higher Ratios of American Indian and African Americans than Whites.
Respiratory Therapists Also Have Higher Ratio of American Indians than Whites

Respiratory Therapists per 10K Pop of Same Race/Ethnicity, North Carolina, 2009

- American Indian/Alaska Native: 7
- White: 5
- North Carolina: 4
- Asian/Pacific Islander: 3
- African American/African: 2
- Hispanic/Latino: 1

Ratio per 10K Pop, Same Race/Ethnicity
Age by Race/Ethnicity for Selected Professions
Practitioners from Underrepresented Race/Ethnicities are Younger: Physicians and Primary Care Physicians

Mean Age by Race, North Carolina, 2009:
All Physicians and Primary Care Physicians

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Mean Age Physicians</th>
<th>Mean Age Primary Care Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>48.9</td>
<td>48.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>45.2</td>
<td>44.6</td>
</tr>
<tr>
<td>African American/Black</td>
<td>44.7</td>
<td>44.0</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>44.3</td>
<td>43.7</td>
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<tr>
<td>American Indian/Alaska Native</td>
<td>43.7</td>
<td>43.0</td>
</tr>
</tbody>
</table>
Practitioners from Underrepresented Race/Ethnicities are Younger: Dentists

Mean Age by Race, North Carolina, 2009: Dentists

- White: 48.9
- American Indian/Alaskan Native: 48.5
- African American/Black: 44.4
- Asian/Pacific Islander: 37.3
- Hispanic: 37.2
Practitioners from Underrepresented Race/Ethnicities are Younger: RNs and LPNs

Mean Age by Race, North Carolina, 2009:
Registered Nurses and Licensed Practical Nurses

- White: RN 43.9, LPN 45.0
- African American/Black: RN 42.3, LPN 44.2
- Asian/Pacific Islander: RN 40.1, LPN 40.2
- American Indian/Alaska Native: RN 39.1, LPN 41.4
- Hispanic: RN 38.6, LPN 39.0
Female Physicians are Also More Diverse...

Diversity of Physicians by Sex, North Carolina, 2009

Male
N = 13,973

Female
N = 5,545

82.4%
70.1%

17.6%
29.9%

Nonwhite
White
... and Non-White Female Physicians are Also Younger

![Distribution of Physicians by Age and Sex](image)

**North Carolina, 2009**

- **Nonwhite Male Physicians:**  
  - N = 2,458

- **Nonwhite Female Physicians:**  
  - N = 1,656
How has Diversity Changed Over Time?
Health Professions are Diversifying Over Time at Different Rates

Change in Non-White Diversity of Selected Health Professions, North Carolina: 1994-2009

Percent Nonwhite

Year


Dental Hygienists
Certified Registered Nurse Anesthetists
Surgeons
Physical Therapy Assistants
Primary Care Physician
Registered Nurse
Licensed Practical Nurse
Pharmacists
Dentists
North Carolina
Where are NC’s Diverse Health Professionals Educated?

Do we import them?
Do we grow our own?
Physicians
Primary Care Physicians More Diverse Than Other Physicians

Physician & PA Diversity vs. State Diversity, North Carolina, 2009

- NC: 33% Other/Multiracial, 21% Hispanic, 27% African American/Black, 33% American Indian/Alaska Native, 21% White
- All Physicians: 67% Other/Multiracial, 79% Hispanic, 73% African American/Black, 33% American Indian/Alaska Native, 73% White
- PCP: 27% Other/Multiracial, 21% Hispanic, 27% African American/Black, 21% American Indian/Alaska Native, 73% White
But North Carolina Increasing Diversity by Importing it, Rapid Growth in International Medical School Graduates

Medical School Location of Primary Care Physicians Practicing in North Carolina, 1990-2010

Sources: North Carolina Health Professions Data System with data derived from the North Carolina Medical Board, 1990 to 2010; Figures include all licensed, active, instate, non-federal, non-resident-in-training physicians.
Majority of NC’s Non-White Primary Care Physicians Educated in Other States and Countries

Non-White Primary Care Physicians by School
North Carolina, 2009

- 42.0% IMG
- 33.5% Other U.S. schools (non-HBCU)
- 17.6% NC
- 5.5% HBCU
- 2.6% Howard
- 2.2% Meharry
- 0.9% Puerto Rico
- 0.4% Canada
- 0.8% Morehouse

n=2,250
Of Non-White Primary Care Physicians Educated in NC, Half are from UNC-CH

North Carolina-Educated, Non-White Primary Care Physicians by School, 2009

- UNC: 50.9%
- ECU: 22.2%
- Duke: 10.1%
- WFU: 16.9%

n=397
Majority of NC’s Non-White Surgeons Also Educated in Other States and Countries

<table>
<thead>
<tr>
<th>School Type</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>IMG</td>
<td>31.5%</td>
</tr>
<tr>
<td>NC HBCU</td>
<td>15.9%</td>
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<tr>
<td>Other U.S. states (non-HBCU)</td>
<td>44.4%</td>
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<tr>
<td>Canada</td>
<td>0.4%</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>0.9%</td>
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<tr>
<td>Howard</td>
<td>5.2%</td>
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<tr>
<td>Meharry</td>
<td>1.7%</td>
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</table>

* n=232

Non-White Surgeons by School
North Carolina, 2009
Largest Percent of NC Educated, Non-White Surgeons is from Duke

North Carolina-Educated, Non-White Surgeons by School, 2009

- Duke: 43.2%
- ECU: 18.9%
- UNC: 24.3%
- WFU: 13.5%

n=37
Dentists
Most of NC’s Non-White Dentists Were Educated Out of State

Non-White Dentists by School
North Carolina, 2009

- 36.5% UNC-Chapel Hill
- 20.0% HBCU
- 43.5% Other U.S. States
- 13.4% Howard
- 6.6% Meharry

Will this change with ECU’s dental graduates?

n=635
NC Increasingly Importing African American Dentists from Other States as Contribution of HBCUs Declines

Percent of African American Dental School Graduates from UNC Chapel Hill, Selected HBCU and Other U.S. Dental Schools, 1994-2009
Nurses
Nearly 3 out of 4 Non-White RNs in 2009 Were Educated Instate

Non-white RNs by School
North Carolina, 2009

Out of State
29%

Instate
71%

n=12,549 Nonwhite RNs
Non-White NC Educated Registered Nurses by School, 2009

North Carolina-Educated, Non-White RNs by School, 2009

- 25.1% HBCU
- 48.8% NCCCS
- 6.3% Hospital Training Program (HOSP)
- 4.3% ECU
- 4.4% Private, other
- 3.8% UNC
- 2.5% UNC-G
- 2.4% UNC-C
- 2.5% UNC-P
- 0.8% UNC-W
- 0.6% WCU
- 0.5% UNC
- 0.5% NCCCS
- 0.4% OTHER
- 0.5% PRIVATE, OTHER

n=8,948
Dental Hygienists Less Diverse than Dentists or Pharmacists

Dentist, Hygienist & Pharmacist vs. State Diversity, North Carolina 2009

<table>
<thead>
<tr>
<th>%nonwhite</th>
<th>NC DIVERSITY</th>
<th>Dentist</th>
<th>Hygienist</th>
<th>RPh</th>
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<tbody>
<tr>
<td>33%</td>
<td>67%</td>
<td>16%</td>
<td>6%</td>
<td>12%</td>
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<tr>
<td>90%</td>
<td>n=9,045,705</td>
<td>n=4,091</td>
<td>n=5,130</td>
<td>n=8,676</td>
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- Other/Multiracial
- Hispanic
- African American/Black
- Asian/Pacific Islander
- American Indian/Alaska Native
- White
Nearly 2 Out of 3 Non-White RTs in 2009 Were Educated Instate

Respiratory Therapists in Practice in North Carolina by School, 2009

- 62% North Carolina
- 38% Out of State
Many Community Colleges Contribute to Non-White RTs in the State

Percent Non-White Respiratory Therapists from NC Schools, 2009

- Durham Technical CC: 15.8%
- Central Piedmont CC: 13.0%
- Fayetteville Technical CC: 13.0%
- Robeson CC: 11.5%
- Sandhills CC: 9.7%
- Pitt CC: 8.1%
- Edgecombe CC: 7.1%
- Forsyth Technical CC: 6.4%
- Rockingham CC: 5.9%
- Catawba Valley CC: 4.1%
- Carteret CC: 2.3%
- Stanley Technical CC: 1.5%
- Southwestern CC: 1.0%
- Lenoir CC: 0.5%
- UNC Pembroke: 0.3%

n=393
Robeson County Community College Provides More Than Half of All American Indian RTs

NC American Indian Respiratory Therapists (RT) by school, 2009

- Robeson County CC: 56%
- Sandhills CC: 16%
- Fayetteville Technical CC: 11%
- Other NC schools: 10%
- Out of state: 7%

n=73
Where Do Our Non-White Health Care Practitioners Practice?

- Geographically concentrated with nearly half located in Mecklenburg, Wake, Durham, Guilford, Forsyth, Pitt and Cumberland counties
- About four out of five (79%) are located in metropolitan counties
About 1 in 3 American Indian/Alaskan Native Health Care Practitioners are in Robeson County


AIAN Population (counties)

- Robeson: 46,064 (1)
- 1,500 to 3,602: 10
- 500 to 1,499: 17
- 100 to 499: 41
- 1 to 99: 29
- No AIAN Population: 2

AIAN Providers = 1,358
AIAN Population = 97,830
AIAN Population : AIAN Providers = 72:1

1 Dot = 1 AIAN Provider
About Half of Hispanic/Latino Practitioners are in Urban Areas but These Areas Still Fall Short of Achieving Parity with Population

Hispanic/Latino Population and Healthcare Providers, North Carolina, 2009

Hispanic/Latino Population

<table>
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<tr>
<th>Category</th>
<th>Count</th>
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<tr>
<td>10,000 to 24,999</td>
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<td>5,000 to 9,999</td>
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<td>1,000 to 4,999</td>
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<td>1 to 999</td>
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<tr>
<td>No Hispanic Population</td>
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Hispanic/Latino Providers = 1,815
Hispanic/Latino Population = 633,220
Hispanic/Latino Population : Hispanic/Latino Providers = 348.1

1 Dot = 1 Hispanic Provider
About Half of African American Practitioners are in Urban Areas but are Largest Percent of Workforce in Northeastern and Southeastern Counties


- Mecklenburg: 245,628 (1)
- 25,000 to 165,505: 16
- 15,000 to 25,000: 18
- 5,000 to 15,000: 29
- 1 to 5,000: 36
- No Black Population: 0

Af Am/Black Providers = 17,905
Af Am/Black Population = 1,894,014
Af Am/Black Population : Af Am/Black Providers = 105.8
Reflections

• Relative lack of diversity of RNs
• Lack of diversity among allied health professions, particularly among OTAs and PTAs
• Economic development issue—entry-level jobs on the career ladder
• Community college system and HBCUs contributing significantly to non-white workforce
• We are importing non-white physicians and dentists
More reflections...

- More diverse workforce is more female and young—how to encourage leadership and development?
- Why have health professions diversified at different rates?
  - LPNs are most diverse
  - Why haven’t allied health professions diversified as quickly?
    - Slower to diversify—dental hygienists
- Should we be looking at socioeconomic status?
- Relationship of diversity to social mission?
Barriers to Increasing Workforce Diversity

- Limited loan repayment for some professions
- Low matriculation rates in allied health professions and other health professions
- High attrition rates—costly to system and student
- Racial/ethnic disparities in K-12
- Lack of faculty and mentors
- Broken career ladders
Next Steps

Who needs to see these data?

• Legislators, philanthropic foundations, deans of health professional schools, guidance counselors, others?

How can data be used?

• Policy making
• Education
• Service
• Research
Questions?
I may or may not have answers...

Erin P. Fraher, PhD MPP
Victoria McGee, MA
North Carolina
Health Professions
Data System

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www.shepscenter.unc.edu/hp