NC’s Oral Health Workforce: Distribution, Diversity, and Access to Care

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Program on Health Workforce Research and Policy

NC Dental Public Health Educational Conference
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Who we are and what we do
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
- A collaboration between the Sheps Center, NC AHEC and the health professions licensing boards
- System is independent of government and health care professionals
North Carolina’s health workforce data are the envy of other states

- 37 years of continuous, complete licensure \textit{(not survey)} data on 19 health professions from 11 boards
- Data are provided \textit{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
Key takeaways from this presentation

- Concerns about NC dentist supply
  - Dentists are geographically maldistributed
  - Progress to be made on race & gender diversity

- You can explore the data in our interactive website
  - [https://nchealthworkforce.sirs.unc.edu/](https://nchealthworkforce.sirs.unc.edu/)

- Dental schools help shape NC’s workforce
  - Growing our own dentists

- Other states are changing what providers do
  - Sometimes SOP, sometimes not
What this presentation covers...and what it doesn’t

I am a patient with an oral health need. Can I get care?

- **Access**  
  Is there a provider available?

- **Cost**  
  Can I afford care?
Oral Health Need in NC

- 86 NC counties met federal criteria as a Dentist Health Professional Shortage Area in 2016

- In NC in 2014, 2.5% of ED visits were related to dental conditions, compared to 1-2% in US

Disproportionate use of ED for dental reasons for patients who are Black...

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent of Dental ED Visits</th>
<th>Percent of State Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, non-Hispanic</td>
<td>54</td>
<td>65</td>
</tr>
<tr>
<td><strong>Black, non-Hispanic</strong></td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td>Other race, non-Hispanic</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Hispanic, any race</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
<td>N/A</td>
</tr>
</tbody>
</table>

...are self-pay or Medicaid patients, and live in rural areas.

### Characteristics of Patients Treated for Dental Reasons at Emergency Departments, NC, 2014

<table>
<thead>
<tr>
<th>Payer</th>
<th>Percent of Dental ED Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-pay</td>
<td>52</td>
</tr>
<tr>
<td>Medicaid</td>
<td>25</td>
</tr>
<tr>
<td>Medicare</td>
<td>6</td>
</tr>
<tr>
<td>Private</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSA Designation</th>
<th>Dental ED Visits per 10,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro</td>
<td>98</td>
</tr>
<tr>
<td>Non-Metro</td>
<td>141</td>
</tr>
<tr>
<td>State Average Rate</td>
<td>109</td>
</tr>
</tbody>
</table>

Nine NC counties have highest ED dental visit rates

Access to providers in rural areas reduces ED use for dental visits

“Higher density of dental providers was associated with lower rates of dental ED visits by patients with Medicaid in rural counties, but not in urban counties.”

The Dental Workforce in NC
How many dentists and dental hygienists work in NC?

4,857 Dentists
5,895 Dental Hygienists
in 2015

Sources: North Carolina Health Professions Data System, with data derived from the North Carolina Board of Dental Examiners, 2015. Data include all, active, in-state dentists and dental hygienists.
HRSA’s NC workforce projections

- Dentist shortage will increase from 270 (2012) to 459 (2025)

- Dental hygienist surplus will increase to 858 (2025)

NC has consistently lagged behind US in dentists per capita

Dentists per 10,000 Population, US and NC, 1979 to 2014

Sources: NC Health Professions Data System, 1979 to 2014 with data derived from the North Carolina State Board of Dental Examiners; HRSA, Bureau of Health Professions; US Bureau of the Census; Center for Disease Control; North Carolina Office of State Planning. Figures include all licensed active dentists practicing in NC as of Oct. 31 of each year.
Positive news: NC has gained dentists per capita, although still ranks nationally in the bottom 5th

| Dentists Working in Dentistry per 10,000 Population |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| United States  | 5.7       | 5.9       | 5.9       | 6.1       |
| Bottom Ranked  |           |           |           |           |
| North Carolina | 47  | 4.2       | 41  | 4.5       | 43  | 4.7       | 39  | 5.0       |
| Tennessee      | 30  | 5.1       | 30  | 4.9       | 36  | 4.8       | 40  | 5.0       |
| West Virginia  | 34  | 4.8       | 38  | 4.5       | 42  | 4.7       | 41  | 4.9       |
| Louisiana      | 38  | 4.6       | 46  | 4.4       | 38  | 4.8       | 42  | 4.8       |
| Missouri       | 36  | 4.7       | 37  | 4.6       | 44  | 4.6       | 43  | 4.8       |
| South Carolina | 40  | 4.5       | 42  | 4.5       | 41  | 4.7       | 44  | 4.8       |
| Indiana        | 35  | 4.7       | 40  | 4.5       | 45  | 4.6       | 45  | 4.8       |
| Georgia        | 45  | 4.3       | 43  | 4.5       | 46  | 4.6       | 46  | 4.7       |
| Delaware       | 44  | 4.4       | 45  | 4.4       | 47  | 4.4       | 47  | 4.6       |
| Alabama        | 47  | 4.2       | 48  | 4.1       | 48  | 4.2       | 48  | 4.4       |
| Mississippi    | 39  | 3.9       | 50  | 3.9       | 49  | 4.1       | 49  | 4.3       |
| Arkansas       | 50  | 3.9       | 49  | 3.9       | 50  | 3.9       | 50  | 4.1       |

The big issue is maldistribution: NC’s dentists are concentrated in one fifth of the state’s counties

Dentists per 10,000 Population
North Carolina, 2014

Note: Data include active, instate dentists licensed in North Carolina as of October 31, 2014. Source: North Carolina Health Professions Data System, with data derived from the North Carolina State Board of Dental Examiners, 2014. Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
NC has seen consistent growth in dental hygienists

Dental Hygienists per 10,000 Population, US and NC, 1979 to 2014


Sources: NC Health Professions Data System, 1979 to 2014 with data derived from the North Carolina State Board of Dental Examiners; HRSA, Bureau of Health Professions; US Bureau of the Census; Center for Disease Control; NC Office of State Planning. Figures include all licensed active dental hygienists practicing in NC as of Oct. 31 of each year.
NC Health Professions Data System Website
launched May 2, 2017
The data book was the signature product of the HPDS.
https://nchealthworkforce.sirs.unc.edu/
Racial & Ethnic Diversity
Race/Ethnicity of dentist and dental hygienist workforce falls short of matching population diversity

Diversity of North Carolina's Population versus Diversity of Dental Profession, 2014

North Carolina Population: 64%
North Carolina Dentists (n=4,671): 82%
North Carolina Dental Hygienists (n=5,387): 92%

Source: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Data include active, in-state dentists and dental hygienists as of October 31. 10 dentists and 411 dental hygienists missing race information were omitted from analyses. Population data from US Census.
Most of NC’s non-white dentists were educated out of state

Non-White Dentists by School
North Carolina, 2014

- UNC-Chapel Hill: 34.4%
- Other US States: 44.3%
- Other: 17.8%
- International: 3.5%
- Howard: 10.3%
- Meharry: 7.5%

n=863

Sources: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Figures include active, instate dentists licensed in North Carolina as of October 31 of the respective year.
UNC and ECU dental students more closely reflect NC’s diverse population

Diversity of North Carolina's Population versus Diversity of NC Dentists and Dental Students, 2014

- **North Carolina Population**
  - 64% Caucasian
  - 30% African American
  - 6% Hispanic
  - 4% Other

- **North Carolina Dentists (n=4,671)**
  - 82% Caucasian
  - 8% African American
  - 6% Hispanic
  - 4% Other

- **University of North Carolina Dental Students**
  - 64% Caucasian
  - 10% African American
  - 20% Hispanic
  - 6% Other

- **East Carolina University Dental Students**
  - 72% Caucasian
  - 8% African American
  - 10% Hispanic
  - 10% Other

Source: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Data include active, in-state dentists and dental hygienists as of October 31. 10 dentists and 411 dental hygienists missing race information were omitted from analyses. Population data from US Census. Student data from University of North Carolina at Chapel Hill and East Carolina University for the graduating classes of 2015-2019.
Education as a Policy Lever for Dentist Access in Rural Areas
Dentists from rural places are more likely to practice in rural places

Virginia Commonwealth University Dental School Graduates practicing in VA and in rural areas, classes of 2000-2014

Half of NC’s dentist workforce graduated from UNC

Source: North Carolina Health Professions Data System, with data derived from the North Carolina State Board of Dental Examiners, 2014.

Note: Data include dentists actively practicing in North Carolina as of October 31, 2014. “Core Based Statistical Area” (CBSA) is the US Census Bureau and Office of management and Budget collective term for Metropolitan and Micropolitan Statistical Areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs, effective March 2013.

Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.
New UNC-CH grads more likely to practice in rural areas

Practice Location of Newly Licensed Dentists, North Carolina, 2014

- New UNC-CH Grad (n=70): 81.4% Metro, 18.6% Nonmetro
- New Out-of-State Grad (n=105): 90.5% Metro, 9.5% Nonmetro
- Licensed by credential (n=26): 88.5% Metro, 11.5% Nonmetro

Source: North Carolina Health Professions Data System with data derived from the North Carolina State Board of Dental Examiners, 2014. Figures include active, instate dentists licensed in North Carolina as of October 31, 2014.
How will ECU’s Dental School affect NC’s dentist supply?

- Admit students who are NC residents
- Mission focused on underserved communities: train in Community Service Learning Centers
- 1st class graduated 2015 = it’s too early to evaluate outcomes
Graduates of Brody School of Medicine at East Carolina University 1985

Produced by the Program on Health Workforce Research and Policy at the Cecil G. Sheps Center at UNC-CH, 2017. Data are derived from the North Carolina Medical Board annual licensure file as of October 31 of year indicated. Data include physicians in active practice in North Carolina who are not employed by the federal government and are not in residency training.
Graduates of Brody School of Medicine at East Carolina University 1990

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A Menu of Oral Health Workforce Policy Options
What workforce initiatives are underway in NC?
Education & Loan Repayment

• Education
  – Pre-college training (NC AHEC)
  – Admissions (rural backgrounds, diversity)
  – Learning opportunities in rural/underserved communities

• Loan Repayment
  – State and Federal Programs
Medicaid Dental Benefits in NC

• NC is one of 15 states where Medicaid offers adults “extensive” dental benefits¹

But...

• In 2012, fewer than 50% of NC’s dentists accepted Medicaid patients²

• Just a quarter were ‘significant providers,’ billing $10,000 or more²


What are other states doing to build their oral health workforces?
Dental Hygienists

- State laws vary regarding where hygienists can practice independently and what services they can provide
- “Direct access” hygienists assess and treat patients without specific authorization/presence of a dentist on-site
- States where hygienists practice independently in public health settings have more FQHCs that deliver dental services

States with “Direct Access” Dental Hygienists

Direct Access 2016
39 States

The American Dental Hygienists’ Association (ADHA) defines direct access as the ability of a dental hygienist to initiate treatment based on their assessment of a patient’s needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and maintain a provider-patient relationship (ADHA Policy Manual, 13-15).

http://www.adha.org/resources-docs/7524_Current_Direct_Access_Map.pdf
Dental Therapists

- Provide preventive and restorative care
  - Oral exams, restorations, simple extractions, place crowns, etc.
  - Refer more complicated services to dentist
- Fewer than 100 practice in the United States
- See article for summary of dental therapist legislation in AK, ME, MN, VT:
Integrating Oral Health Care into Primary Care

- Train primary care team & designate someone responsible for oral health
  - Physician, NP/PA, Nurse, LPN, Medical Assistant
- Screen for oral health risk & examine mouth
- Oral hygiene training and patient referral
- Apply fluoride varnish

- In NC, “Into the Mouths of Babes” & Carolina Dental Home Program, both for kids
Questions?

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