Retooling and Reconfiguring North Carolina’s Health Workforce to Meet the Demands of a Transformed Health Care System

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Presentation Overview

- Why we need to retool and reconfigure the workforce
- Current challenges
- Future challenges
- What is needed to move toward a transformed system?
- Alignment of AHEC traditional mission with goals of health reform
Why Do We Care?

The Current Policy Context

- **Demand side**: aging population, increase in chronic disease, insurance expansions, rising patient expectations

- **Supply Side**: health workforce is growing, deployment is rigid, turf wars abound, and productivity is lagging

With, or without health reform, cost and quality pressures will drive health system change

**The current system is not sustainable**
The State of the State:
Let’s Drown (or Swim) a Bit in Some Data
North Carolina Health Care Employment is Growing Rapidly

Total Employment in Manufacturing and Health Care and Social Assistance Employment in NC, 1999-2009

But More People are Doing Less

- Of $2.6 trillion spent nationally on health care, 56% is wages for health workers
- Workforce is LESS productive now than it was 20 years ago...

And Despite Overall Growth, Persistent Maldistribution

**Primary Care Physicians per 10,000 Population by Persistent Health Professional Shortage Area (PHPSA) Status, North Carolina, 1979 to 2010**

**Notes:** Figures include all active, instate, nonfederal, non-resident-in-training physicians licensed as of October 31st of the respective year. Primary care physicians include those indicating a primary specialty of family practice, general practice, internal medicine, Ob/Gyn or pediatrics. Persistent HPSAs are those designated as HPSAs by HRSA from 1999 through 2005, or in 6 of the last 7 releases of HPSA definitions.
NC Bucks National Trend: More Rapid Increase in Primary Care Physicians

Percentage Growth Since 1990 of Physicians and Primary Care Physicians per 10,000 Population, North Carolina, 1991-2009

Sources: North Carolina Health Professions Data System with data derived from the North Carolina Medical Board, 1979 to 2009; North Carolina Office of State Planning. Figures include all licensed, active, instate, non-federal, non-resident-in-training physicians.
But This Growth Has Not Come From North Carolina’s Medical Schools

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.
Private Schools Declining, UNC-CH Steady, ECU Increasing

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

How will this look when Campbell starts graduating 150 students per year?

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.
Why Do We Care Where Physicians Trained?

Because it affects specialty choice, practice location and workforce diversity
NC Medical Students: Retention of Graduates in Primary Care After Five Years

<table>
<thead>
<tr>
<th>School</th>
<th>2005 Graduates</th>
<th>% Initially Selecting PC Specialty</th>
<th>2010: % in Primary Care (Anywhere in US)</th>
<th>2010: % in Primary Care (in NC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duke</td>
<td>78</td>
<td>60%</td>
<td>23%</td>
<td>8%</td>
</tr>
<tr>
<td>ECU</td>
<td>73</td>
<td>82%</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>UNC</td>
<td>152</td>
<td>60%</td>
<td>38%</td>
<td>21%</td>
</tr>
<tr>
<td>Wake Forest</td>
<td>105</td>
<td>60%</td>
<td>37%</td>
<td>17%</td>
</tr>
<tr>
<td>Total</td>
<td>408</td>
<td>64%</td>
<td>38%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Source: Duke Office of Medical Education, UNC-CH Office of Student Affairs, ECU Office of Medical Education, Wake Forest University SOM Office of Student Affairs, Association of American Medical Colleges, and the NC Medical Board.

Prepared by the North Carolina Health Professions Data System and the North Carolina AHEC Program.
Retention in North Carolina of Class of 2005 in 2010: Primary Care

NC Medical Students: Retention in Primary Care in NC’s Rural Areas

Total Number of 2005 graduates in training or practice as of 2010:

408

Initial residency choice of primary care

261 (64%) 

In training/practice in primary care in 2010:

155 (38%) 

In primary care in NC in 2010:

86 (21%) 

In PC in rural NC:

10 (2%) 

Class of 2005 (N=422 graduates)

Source: North Carolina Health Professions Data System with data derived from the Duke Office of Medical Education, UNC-CH Office of Student Affairs, ECU Office of Medical Education, Wake Forest University SOM Office of Student Affairs, Association of American Medical Colleges, and the NC Medical Board, 2011.
And Where Physician Completed a Residency Even More Important Predictor of Retention in NC

46% of physicians who complete an NC AHEC residency stay in North Carolina to practice compared to 31% of physicians who complete a non-AHEC residency stay in North Carolina to practice.

Source: NC Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the American Medical Association Masterfile, 2011. "Active" includes federal, as well as non-patient care activities such as teaching, research, administration, etc.
AHEC-Trained Residents
More Likely to Practice in Rural Areas

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Residency Type</th>
<th>Practicing in NC, 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>% in Metro Area</td>
</tr>
<tr>
<td>ALL</td>
<td>AHEC</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>Non-AHEC</td>
<td>88%</td>
</tr>
<tr>
<td>Primary Care</td>
<td>AHEC</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>Non-AHEC</td>
<td>85%</td>
</tr>
<tr>
<td>General Surg</td>
<td>AHEC</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>Non-AHEC</td>
<td>81%</td>
</tr>
</tbody>
</table>

Of the active and practicing physicians who completed a NC AHEC residency, 1,491 (46%) are practicing in NC and 1,739 (54%) are practicing outside of NC.

Of the active and practicing physicians who completed a NC Non-AHEC residency, 6,092 (31%) are practicing in NC and 13,639 (69%) are practicing outside of NC.

Note: Primary Care includes the following specialties: Family Medicine, Internal Medicine, Obstetrics and Gynecology, and Pediatrics.

Source: NC Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the American Medical Association Masterfile, 2011. “Active” includes federal, as well as non-patient care activities such as teaching, research, administration, etc.
And More Likely to Choose Primary Care

Former North Carolina Residents Practicing in NC by Primary Care Residency Specialty, 2011

- **All Primary Care Residency Programs**: 53% (AHEC Residency), 32% (Non-AHEC Residency)
- **Family Medicine Residency Programs**: 58% (AHEC Residency), 38% (Non-AHEC Residency)
- **Internal Medicine Residency Programs**: 49% (AHEC Residency), 25% (Non-AHEC Residency)
- **Pediatrics Residency Programs**: 51% (AHEC Residency), 34% (Non-AHEC Residency)
- **OB/GYN Residency Programs**: 43% (AHEC Residency), 37% (Non-AHEC Residency)

Source: NC Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, with data derived from the American Medical Association Masterfile, 2011. "Active" includes federal, as well as non-patient care activities such as teaching, research, administration, etc.
But Who Counts as “Primary Care”?
Who’s in PC and How Much Primary Care Do They Report Providing?

Percentage of Total Clinical Care Hours Spent in Primary Care
North Carolina, 1999-2008

Year


Percent

Family Medicine/General Practice

Pediatrics

Internal Medicine

OB/GYN

Source: NC Health Professions Data System with data derived from the North Carolina Medical Board. Data are for active, in-state, non-federal, non-resident-in-training physicians licensed by the NC Medical Board as of October of each year. Data are self-reported at time of initial licensure and subsequent renewal.
But, Specialists Also Provide Primary Care

Percentage of Total Clinical Care Hours Spent in Primary Care
North Carolina, 1999-2008

- **Primary Care Physicians**
  - 76.5% in 1999
  - 76.7% in 2008

- **Non-Primary Care Physicians**
  - 24.1% in 1999
  - 22.9% in 2008

Source: NC Health Professions Data System with data derived from the North Carolina Medical Board. Data are for active, in-state, non-federal, non-resident-in-training physicians licensed by the NC Medical Board as of October of each year. Data are self-reported at time of initial licensure and subsequent renewal.
Are NPs and PAs the Answer to Physician Shortages?

Percentage Growth Since 1990 of Physicians, PAs and NPs per 10,000 Population, North Carolina, 1991-2009

Source: NC Health Professions Data System with data derived from the North Carolina Medical Board. Data are for active, in-state, non-federal, non-resident-in-training physicians licensed by the NC Medical Board as of October of each year. Data are self-reported at time of initial licensure and subsequent renewal.
How Many NPs are in Primary Care?
Depends on How You Count ‘Em

Defining Primary Care Nurse Practitioner Specialty, NC, 1997-2010:
Comparison of Certification and Supervisory Definitions

Notes: Data for primary specialty (“supervisory”) include active, in-state NPs indicating a primary specialty of family practice, general practice, internal medicine, Ob/Gyn, or pediatrics, who were licensed in NC as of October 31 of the respective year. Data for physician extender type (“certification”) include active-in-state NPs indicating a physician extender type of family nurse practitioner, adult nurse practitioner, ob/gyn nurse or pediatric nurse practitioner who were licensed as of October 31 of the respective year.

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 NC Medical Board.
And PAs are Increasingly Specializing

Physician Assistants in Specialty vs. Primary Care, North Carolina, 1996-2009

Notes: Data include active, instate physician assistants licensed in NC as of October 31 of the respective year. Primary care includes family practice, general practice, internal medicine, Ob/Gyn, or pediatrics.

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 NC Medical Board.
Measuring Primary Care Supply Is Not an Easy Task....

Need to:

• Move beyond “counting noses” by specialty designation to understand the content of practice

• Heterogeneity among practice of physicians in same specialty

• Overlap of scopes of services provided by physicians in different specialties

• Broaden primary care definition to include other physician specialties and non-physician providers
Old School versus New School

- **Old school**: relationship of numbers of primary care docs to patient outcomes
- **New school**: emphasis on new models of care: interprofessional and integrated systems of care

“Our findings suggest that the nation's primary care deficit won't be solved by...boosting the number of primary care physicians in an area or by ensuring that most patients have better insurance coverage. Policy should also focus on improving the actual services primary care clinicians provide and making sure their efforts are coordinated with those of other providers, including specialists, nurses and hospitals.”

(Interview with David Goodman, Medical News Today, September 10, 2010
http://www.medicalnewstoday.com/articles/200599.php)
The Patient-Centered Medical Home

Defining Principles

- Defined patient population
- Patient care is:
  - Coordinated across medical specialties and settings
  - Integrated with community-based services
- Health information technology used to identify, and monitor, population health needs
- Payment incentives promote lower costs, increased quality

(Cassidy et al, *Health Affairs*, September 14, 2010)
Who is on the PCMH team?

Full implementation of PCMH model will require:

• Interdisciplinary workforce of licensed and unlicensed workers in **health and community** settings

• We don’t yet know the:
  – Skills and competencies required to function in PCMHs
  – Types and numbers of providers needed
  – Where providers are needed
  – Different skill mix configurations in which they should be deployed
What Training is Required to Staff the Full Scope of PCMH Services?

Full implementation of PCMH model will require:

- Not only increasing supply of new workers but retooling/retraining existing workforce
- Identifying new health professional roles, certifications and training
- Developing new career pathways
- Increasing the racial/ethnic and linguistic diversity of the health professional workforce
And Speaking of Integrated Models of Care….What about Mental Health?

- 70% of all primary care visits have psychosocial drivers
- 50% of all mental health care is done by PCPs
- 67% of all psychoactive drugs prescribed by PCPs
- Depressed patients use 3 times more healthcare services
- Depressed patients have 7 times more emergency visits
- Depression is associated with longer hospital stays

Half of NC’s Counties Qualify as Mental Health Professional Shortage Areas

Psychiatrist Full-Time Equivalents per 10,000 Population
North Carolina, 2008

Produced by: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. Source: North Carolina Health Professions Data System, with data derived from the North Carolina Medical Board, 2008; LINC, 2010; NC DHHS, MHDDSAS, 2010. Note: Psychiatrists include active, instate, nonfederal, non-resident-in-training physicians who indicate a primary specialty of psychiatry, child psychiatry, psychoanalysis, psychosomatic Medicine, addiction/chemical dependency, forensic psychiatry, or geriatric psychiatry, and secondary specialties in psychiatry, child psychiatry and forensic psychiatry.
General Surgery As Primary Care?

Percent Change in Ratio of General Surgeons to Population 1997 - 2008
North Carolina

% Change per 100,000 Population
- Gained More than 50% (3)
- Gained Less than 50% (17)
- Decline in Ratio (54)
- Lost All Surgeons (5)
- None in 1997, at least 1 in 2008 (1)
- No Surgeons Either Year (20)


Source: North Carolina Medical Board physician licensure data, 1997 - 2008; and 2010 Area Resource File for population data.

Produced by the Cecil G. Sheps Center for Health Services Research, UNC-CH, August 3, 2010.
Diversity and Workforce Needs

In context of emerging workforce shortfalls and maldistribution:

• Are we adequately accessing a talented pool of workers?

• Is there access to education and upward job mobility?

A transformed health care system will emphasize population health, reducing health disparities, and community-based models of care.

Can we accomplish this system without increasing workforce diversity?
Race/Ethnicity of Practitioners Falls Short of Matching Population Diversity

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

- **% nonwhite**:
  - NC Population: 33%
  - Licensed Practical Nurses: 31%
  - Primary Care Physicians: 27%
  - Respiratory Therapists: 17%
  - Registered Nurses: 16%
  - Dentists: 16%
  - Pharmacists: 12%
  - Surgeons: 12%
  - Nurse Practitioners: 11%
  - Dental Hygienists: 6%

- **Categories**:
  - Other/Multiracial
  - Hispanic/Latino
  - African American/Black
  - Asian/Pacific Islander
  - American Indian/Alaska Native
  - White
Health Professions are Diversifying Over Time at Different Rates

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

North Carolina Health Professions are Diversifying Over Time at Different Rates
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
A transformed health care system will require a transformed workforce.

The people who will support health system transformation for communities and populations will require different knowledge and skills....in prevention, care coordination, care process re-engineering, dissemination of best practices, team-based care, continuous quality improvement, and the use of data to support a transformed system.
But How Do We Get There from Here?
Unlike the Feds, We’re Not Afraid to Use the “P” Word in North Carolina

State has long history of workforce planning:

• Well-established AHEC

• Strong public community college and university system

• History of collaboration and trust

• Better data and analytical capacity than most states

• Strong base from which to move forward
North Carolina’s Workforce Planning: The Critique

• Starts from professional, silo-based perspective
• Little accountability for matching workforce to population health needs
• Limited employer involvement
• Generally not interdisciplinary
• Reactive, heavy reliance on market
• Lacks coordination
Health Workforce Planning in North Carolina the Traditional Way
Result is a “Compromised” Workforce Planning System

- Resembles “a version of Goldilocks written by Albert Camus” with approaches that are either “too hot, or too cold, but never just right” (Grumbach, *Health Affairs* 2002; 21(5): 13-27)

- Often lurches from oversupply to shortage

- Generates “vigorous” disagreements about what constitutes an adequate supply, distribution and “right” mix of health providers

- Data not linked to policy action
Now Ask Yourself, “What Would the Kiwis Do?”
What North Carolina (and the Nation) Can Learn From New Zealand

• Small, relatively poor country compared to Australian neighbor

• Publicly funded system with universal coverage

• Spend about 10% of GDP on health care

• NZ population is ~4.4 million, rural and ethnically diverse

• Despite smaller size and different financing system, NZ faces same health workforce issues as North Carolina
North Carolina and New Zealand

• Current health workforce:
  – not sustainable
  – less productive than in past
  – too many workers not practicing anywhere near top of scope of practice
  – not meeting quality outcomes
  – poorly distributed against need
  – large proportion of workforce nearing retirement

• Primary care, mental health, oral health, and rehabilitation systems “not up to scratch”
How NZ is Addressing Workforce Challenges: **Clinician-Led Change**

- Engaging clinicians in designing future health care system
- Transforming from ground up, rather than top down
- Asking clinicians to design ideal patient pathways by disease area and identify changes that enable new models of care
- Making it personal: “How should we care for Aunt Susie with dementia?”
- Engaging “coalitions of the willing” to overcome professional resistance and “tribalism”
How NZ is Addressing Workforce Challenges:  

**Engaging Employers**

- Are new grads ready for practice?
- Where are biggest gaps and in which professions?
- What curriculum changes are needed for future? *(QI, HIT, care coordination, disease management, patient navigation)*
- What new or retooled workforce is needed to avoid readmissions and integrate care? *More health educators, home health personnel, community health workers for better integration with primary care and community services?*
- In what professions, and for areas of patient care, is the workforce over- and under-skilled?
Under- and Over-Skilling Among Nurses and Other Professionals is BIG Issue

- Recent study in the Netherlands and US asked 34,000 nurses:

  **Q1:** What duties do you perform that you don’t need to perform?
  
  Answer: clearing trays, cleaning rooms, clerical duties, arranging transportation for discharge, other non-nursing tasks etc.

  **Q2:** What duties are you willing/able to perform but don’t because you don’t have time?
  
  Answer: patient education, comforting and talking to patients and family, skin care, procedures and treatments, discharge prep, pain management, patient surveillance

How NZ is Addressing Workforce Challenges: *Creating New Roles, Changing Existing Roles*

How many health professionals does it take to run a health care system?

*Depends on what they are doing*

NZ striving to:

- “Liberate workforce with spare capacity”
- Promote more team-based models of care
- Create new roles and new professions
Sounds Similar to the CMMI Innovation Awards, 2012

Location of CMMI Innovation Awardees, 2012

Cost: $888,320,999

Expected 3 Yr Savings: $2 Billion
Team Members in CMMI Initiatives

- Patient navigators
- Nurse case managers
- Care coordinators
- Community health workers
- Care transition specialists
- Pharmacists
- Living skills specialists
- Patient Family Activator
- Medical Assistants
- Physicians
- Medical Directors
- Dental Hygienists
- Behavioral Health
- Social Workers
- Occupational Therapists
- Physical Therapists
- Grandaids
- Health Coaches
- Paramedics
- Home health aids
- Peer and Family Mentors
How NZ is Addressing Workforce Challenges: 

**Workforce Retention**

- Workforce demographics mean we need to pay more attention to retention
- Higher remuneration ≠ retention
- Health workers want career progression and job satisfaction
- NZ focusing efforts on building creating meaningful, rewarding work environments and careers
- Addressing issues that “irritate people”
How NZ is Addressing Workforce Challenges: Using Workforce Data to Shape Policy

- Health Workforce NZ created in 2009 to better integrate fragmented workforce planning efforts
- Working to build “coalitions of health workforce champions” to interpret and use data to affect change
- Building workforce models that don’t give one “right” answer but allow policy makers to simulate effect of various scenarios
- Idea was to address fact that they were “drowning in data and free of intelligence”
Never Mind New Zealand, Maybe We All Just Need to Embrace the French Model of Work-Life Balance

Translated:
(Hours of operation of your café:
Monday through Sunday
8am to 8pm)
AHEC’s Traditional Mission
Well-Aligned with Health Reform Goals

• AHEC’s primary mission to improve supply, distribution and diversity of health workforce is well-aligned with goals of health reform.

• AHECs foster “interorganizational collaboration... a place where AHECs, community hospitals, state agencies, and other organizations put aside competitive rivalries and institutional politics and collaborate on projects of mutual interest and common benefit.”

Alignment of AHEC with health reform goals

- Teaching Health Centers and primary care residencies in community health centers and other ambulatory sites
- Preceptor development and student placement in high quality sites that use EHRs and actively engage in QI activities
- Electronic library to support teaching and evidence-based clinical practice
AHEC Ahead of the Curve In: Inter-Professional Education and Practice

Alignment of AHEC with health reform goals

Creation of model teaching practices where students are:

• immersed in team-based models of care and prepared to deliver care as part of interdisciplinary health care team

• placed in practices that utilize EHRs and other technology to support high quality practice
AHEC Ahead of the Curve In: Workforce Development, Health Career Pipeline and Diversity

Alignment of AHEC with health reform goals

AHEC engaged in many programs to:

• expand pool of young people interested in health careers

• prepare a workforce more representative of the demographics of the population to better address health disparities in a reformed system
Alignment of AHEC with health reform goals

• AHECs collaborate with extensive network of community-based practices with innovative care delivery models for research on quality/cost

• Collaborate in initiatives such as “Improving Performance In Practice” (IPIP) that promote practice-level quality improvement
Alignment of AHEC with health reform goals

- Sheps-AHEC-licensure board collaboration a model for other states and national efforts to improve health workforce data collection and analysis
- Leading efforts to use data to create “intelligence” that is used for policy-making
- Encouraging folks to make data-driven decisions and use data for program evaluation
Alignment of AHEC with health reform goals

- AHECs have traditionally focused on continuing medical education (CME) but are well-positioned to retool the workforce to meet the demands of new models of care.
- AHECs have capacity to combine traditional CE/CME with web-based courses, with on site consultations, and with information resources through digital libraries.
Questions?
I may or may not have answers...

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Visit our website and join our listserv at

www.shepscenter.unc.edu/hp