Health Professions Education and Workforce Trends

ADA Board of Trustees Mega Topic Discussion: Dentistry’s Future Relationship with Medicine

David C. Sarrett, DMD, MS
Professor of Dentistry &
Associate Vice President for Health Sciences
Virginia Commonwealth University
A perspective from working with health sciences schools in a comprehensive academic medical center

At VCU we have Schools of:
  - Allied Health Professions
  - Dentistry
  - Medicine (includes biomedical sciences)
  - Nursing
  - Pharmacy
  - Public Health (developing)

Overview of presentation:
  - Healthcare workforce issues – primarily physicians
  - Ideas regarding future training models
  - Interactions between dentistry and healthcare and health sciences education policy makers
Over the next 25 years the US will have to deal with rising demand for healthcare services.

Several factors will affect the Healthcare Workforce:

US population is growing;

Largest growth will be in people over age 65; and

Rising expectations for healthcare due to increased wealth, education, and underserved populations.
Number of Americans Over 65 will Grow by 35 Million Between 2000 - 2030

65+: 100% increase from 2000 to 2030

85+: 98% increase from 2000 to 2030

Source: U.S. Census; Prepared by AAMC Center for Workforce Studies
According to the American Association of Medical Colleges (AAMC), by 2020 physician shortages upwards of 200K could occur.

Age distribution of current physicians

1/3 (250K) over age 55 now

New graduates will not work long-hours of previous generations
The AAMC is calling for 30% increase in medical school enrollment.

Rapidly increasing medical school enrollments will be challenging mainly due to costs.

Need for increased modern training space;

VCU seeking to construct a new SOM building it increase class size - $70M for instructional space

Given adequate space and clinical placement sites, existing schools can add enrollment at lower cost per student;

For VCU, $25K/student to increase from 730 to 1000 students (270 new students)

For newly created schools, $65K to $85K per student

AAMC is expecting five new allopathic medical schools to provide 500 new students/year by 2015.
What other factors will affect physician supply?

The applicant pool for medical school appears to be able to support enrollment growth.

*We will still have lack of diversity due to shortages of qualified under-represented minority and disadvantaged students.*

**Caps on reimbursement for medical resident training**

*Balanced Budget Act of 1997 limited number of allopathic and osteopathic medical residents the would be counted for calculating Medicare indirect medical education (IME) and direct graduate medical education (DGME) reimbursements.*

**Resident training cost $60K to $100K/resident/year at VCUHS**
Primary care medicine as a desired career is in decline.

*Today’s graduates are more interested in specialty practice due to:*

- High student debt - $150-200K;
- Higher reimbursements in procedural practices compared with primary care;
- Desired family/personal life style.

---

### Time for Family/Personal Life Most Important Factor in Desirable Position For Physicians Under 50

<table>
<thead>
<tr>
<th>Factor</th>
<th>% Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time for family/personal</td>
<td>69%</td>
</tr>
<tr>
<td>Adequate support staff and services</td>
<td>41%</td>
</tr>
<tr>
<td>Long term income potential</td>
<td>39%</td>
</tr>
<tr>
<td>Practice income</td>
<td>37%</td>
</tr>
<tr>
<td>Health insurance coverage</td>
<td>34%</td>
</tr>
<tr>
<td>Flexible scheduling</td>
<td>33%</td>
</tr>
<tr>
<td>No or very limited on-call</td>
<td>28%</td>
</tr>
<tr>
<td>Adequate patient volume</td>
<td>28%</td>
</tr>
<tr>
<td>Opportunity to advance professionally</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: 2006 AAMC Survey of Physicians Under 50 (preliminary data)
So one might ask the question do we really need more physicians?

It takes 7+ years after college to produce a medical practitioner.

Increased use of nurse practitioner, physician assistants, pharmacist is suggested.

Limitations on replacing the physician for some services are:

Scope of practice and state laws;
Real and perceived levels of ability and training;
Turf envy;
Billing and reimbursement.
You have likely heard about the shortage of nurses more than the shortage of physicians.

In Virginia, the Governor’s Health Reform Task recommends increasing nursing school enrollment by 900 per year. **There are insufficient nursing faculty primarily due to salary differential between practice and teaching.**

Nursing faculty require advanced degrees such as MSN –NP, PhD, and the growing DNP.

American Association of Colleges of Nursing (AACN) endorsed the Position Statement on the Practice Doctorate in Nursing which called for moving the level of preparation necessary for advanced nursing practice roles from the master's degree to the doctorate level by the year 2015.

---

**What Does it Mean for Virginia?**

Largest Occupations for Top 10 Firms

<table>
<thead>
<tr>
<th>Occupation</th>
<th>2006 Qtr 2</th>
<th>2016 Qtr 2</th>
<th>Growth</th>
<th>Retirement</th>
<th>Replacements</th>
<th>Total Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurses</td>
<td>7,338</td>
<td>9,597</td>
<td>2,259</td>
<td>1,069</td>
<td>2,323</td>
<td>5,650</td>
</tr>
<tr>
<td>Nursing Aides, Orderlies, and Attendants</td>
<td>2,757</td>
<td>3,424</td>
<td>667</td>
<td>401</td>
<td>510</td>
<td>1,578</td>
</tr>
<tr>
<td>Management Analyst</td>
<td>2,390</td>
<td>3,420</td>
<td>1,031</td>
<td>337</td>
<td>418</td>
<td>1,786</td>
</tr>
<tr>
<td>Licensed Practical/Licensed Vocational Nurses</td>
<td>1,564</td>
<td>2,001</td>
<td>438</td>
<td>225</td>
<td>340</td>
<td>1,003</td>
</tr>
<tr>
<td>General and Operations Managers</td>
<td>1,148</td>
<td>1,376</td>
<td>228</td>
<td>165</td>
<td>219</td>
<td>612</td>
</tr>
<tr>
<td>Accountants and Auditors</td>
<td>1,075</td>
<td>1,325</td>
<td>250</td>
<td>156</td>
<td>256</td>
<td>662</td>
</tr>
<tr>
<td>Computer Software Engineers, Applications</td>
<td>712</td>
<td>996</td>
<td>284</td>
<td>98</td>
<td>283</td>
<td>665</td>
</tr>
</tbody>
</table>

---
From “Changes in the Health Workforce; Trends, Issues, and Credentialing” by Stephen Collier, PhD, University of Alabama

### Health Workforce Employment 2004-2014

Numbers listed are in thousands of jobs

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employment Number</th>
<th>Change</th>
<th>Total job openings due to growth and net replacements, 2004-14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
<td>2014</td>
<td>Number</td>
</tr>
<tr>
<td>Registered nurses</td>
<td>2,394</td>
<td>3,096</td>
<td>703</td>
</tr>
<tr>
<td>Physicians and surgeons</td>
<td>567</td>
<td>702</td>
<td>136</td>
</tr>
<tr>
<td>Dentists</td>
<td>150</td>
<td>171</td>
<td>20</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>230</td>
<td>287</td>
<td>57</td>
</tr>
<tr>
<td>Optometrists</td>
<td>34</td>
<td>40</td>
<td>7</td>
</tr>
<tr>
<td>Physician assistants</td>
<td>62</td>
<td>93</td>
<td>31</td>
</tr>
<tr>
<td>Dental hygienists</td>
<td>158</td>
<td>226</td>
<td>68</td>
</tr>
<tr>
<td>Physical therapists</td>
<td>155</td>
<td>211</td>
<td>57</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>92</td>
<td>123</td>
<td>31</td>
</tr>
<tr>
<td>Respiratory therapists</td>
<td>94</td>
<td>120</td>
<td>27</td>
</tr>
<tr>
<td>Radiologic technologists and technicians</td>
<td>182</td>
<td>224</td>
<td>42</td>
</tr>
<tr>
<td>Clinical laboratory technologists and technicians</td>
<td>302</td>
<td>371</td>
<td>69</td>
</tr>
<tr>
<td>Medical Assistants</td>
<td>387</td>
<td>589</td>
<td>202</td>
</tr>
<tr>
<td>Home Health Aides</td>
<td>624</td>
<td>974</td>
<td>350</td>
</tr>
</tbody>
</table>

By 2014 health care will comprise 1 of every 5 new jobs.

The largest growth on a percentage basis are at the lower end of the training continuum (aides, assistants).

Workforce changes are more rapid than educational changes, thus universities are usually reactive vs. proactive.
Pharmacist are discussing expansion of their practices in areas of “clinical practice.”

Measurement and assurance of medication therapy outcomes

Promotion of wellness and disease prevention

Medication information – particularly for elderly, educationally disadvantaged
Future relationships between dentistry and pharmacy (PharmDss) are likely to increase.

*Oral drug delivery systems* for treating oral and systemic disease will become more commonplace.

Pharmacogenetics will **lead to individualized drug therapy**.

Pharmacist may be **compounding drugs to treat oral problems** and placing them in devices, implants, and tissue reconstruction materials.
The allied health professions are moving toward increased entry-level and advanced-level education for practice.

Transitions from master’s degree programs to professional/clinical doctorates are well underway.

- Doctor of Physical Therapy (DPT)
- Occupational Therapy Doctorate (OTD)
- Doctor of Nurse Anesthesia Practice (DNAP)

All not without concern and debate over degree creep, driving up cost of care, reducing the workforce, and identity by patients (Who is the real doctor?)
Where has all the (healthcare) money gone?

Need for social and behavioral health promotion

Obesity
Smoking
Alcohol and drugs
Violence

The Eleven Most Costly Medical Conditions Are Far More Prevalent Among the Elderly, US 2000

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treated Prevalence per 100,000</th>
<th>Spending (millions of dollars)</th>
<th>% in total health care spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>6,226</td>
<td>56,700</td>
<td>9%</td>
</tr>
<tr>
<td>Trauma</td>
<td>12,338</td>
<td>41,100</td>
<td>7%</td>
</tr>
<tr>
<td>Cancer</td>
<td>3,348</td>
<td>38,900</td>
<td>6%</td>
</tr>
<tr>
<td>Pulmonary conditions</td>
<td>15,526</td>
<td>36,500</td>
<td>6%</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>8,575</td>
<td>34,400</td>
<td>5%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>11,382</td>
<td>23,400</td>
<td>4%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>4,260</td>
<td>18,300</td>
<td>3%</td>
</tr>
<tr>
<td>Arthritis</td>
<td>6,966</td>
<td>17,700</td>
<td>3%</td>
</tr>
<tr>
<td>Back problems</td>
<td>5,092</td>
<td>17,500</td>
<td>3%</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>854</td>
<td>15,000</td>
<td>2%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1,370</td>
<td>12,600</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>312,000</strong></td>
<td><strong>50%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by AAMC Center for Workforce Studies
We need to be careful and evaluate dentistry’s future role in the larger healthcare system.

We need to maintain a focus on evidence-based care.
What can dentistry offer? What are clinical skills dentistry could generalize and apply to reducing disease and improving public health?

Dental education and practice are prevention oriented, unlike many other health professions.
Dentists are among the few practitioners that are experts in trying to change patient behavior to improve health.
Dentist record very good health histories and update them regularly.
Dentists are trained to track health indicators in their patients.
Dental practice management systems are way ahead in the area of monitoring health indicators/trends/treatment outcomes.
Dental schools are very good at teaching procedural practice – could expand scope of procedures.
How are future training models likely to change?  
Or should change?

There should be less education in silos and **greater interdisciplinary interactions** among students.

Greater **reliance on simulation** to decrease training time, measure competence, and improve outcomes will be used.

Health sciences schools should consider sharing faculty to bridge scope of practice chasm.

*Physicians, nurses, Pharmacist in dental schools*  

*Dentist working in other schools*
How are future training models likely to change? Or should change?

Students and residents will spend **more time learning away from the school or hospital.**

A **continuum of doctoral, graduate, and continuing education** should be developed.

Use of **telehealth** for training and consultations will increase as technology spreads.
Dentistry should establish on-going dialog and interactions with other health profession’s organizations that set policy.

We should encourage accreditation bodies to meet and talk.

- **Liaison Committee for Medical Education (LCME)**
- **Commission on Dental Accreditation (CODA)**
- **Accreditation Council for Pharmacy Education (ACPE)**
- **National League for Nursing Accrediting Commission (NLNAC)**

We should facilitate *conversations among the professional regulation boards* within states.

The ADA should consider making or increasing *links with other professional associations* and educational groups such as the AAMC and Association of Academic Health Centers (AAHC).

Encourage funding of projects that *develop integrated curricula* between medical, dental, nursing, and pharmacy schools.
Dentistry should join the national debate on the future of US health care.

If we expand programs to insure or cover people not currently accessing the health care system, will we have enough health care professionals?

Are patients steered to the right providers appropriately and efficiently?

Are we managing our nation’s most valuable resource, the health care workforce in a fiscally and ethically responsible manner?

Catherine Dower, JD, University of California Center for the Health Professions, AAHC October 12, 2007
Commonsense action or regulatory consequences?

Matching training to practice authority

*Example: Nurse anesthetist vs. anesthiologist*

Bringing commonsense to decision-making process regarding regulation

Improve relationships among the professions

National scopes of practice

*Example: Dental assistants and dental hygienist*

All these have in common the need to make decisions based more on what is best for patients
Dentistry’s Challenge

Advances in science and technology will draw dentistry closer to the other health professions.

The needs of patients will require closer collaborations with physicians, pharmacist, therapist.

Maintaining professional, educational, and regulatory independence while at the same time being a “team player” in the health care system.
Reference materials for this presentation.

Physician Workforce Trends: Implications for Virginia. Presentation by Edward Salsberg, Director, Center for Workforce Studies, AAMC.

Questions and Answers About the AAMC’s New Physician Workforce Position. American Association of Medical Colleges.

A Physician Shortage: Will it Exist in Virginia by 2010 and 2015? A presentation by Mick, Nayar, and Carretta, Department of Health Administration, VCU.

Building Virginia’s Healthcare System. A draft presentation by Sebring, VCU School of Medicine.

MA O’Donnell, Director of Graduate Medical Education, Virginia Commonwealth University Health System.

Pulling Regulatory Levers to Improve Health Care, presentation by Catherine Dower, Association of Academic Health Centers, October 12, 2007.