Physician Workforce Issues

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AAMC’s 2006 Workforce Position

• Expand US MD enrollment by 30% by 2015
• Eliminate GME caps
• Expand NHSC by 1500 positions
• Increase the diversity of the workforce
• Leave specialty choice up to students

• Study strategies to address mal-distribution
• Examine options for assessing medical schools outside of the US targeted to Americans
• Support medical education in less developed parts of the world
Cycles in Physician Workforce Policy

- **1920’s – 1940’s**: General concern regarding physician surplus

- **1950’s – 1970s**: Concern with physician shortages; federal policies to stimulate increased supply, particularly primary care

- **1980 – 2000**: Concern with potential surpluses and primary care/specialist mix; federal guidelines and encouragement to limit growth

- **2002 Onward**: Global consensus on future shortages under current system

How can we think about, monitor supply & demand more effectively?

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Challenges to Effective Physician Workforce Planning

- Very long time frames to change supply or distribution
- Uncertain impact of new medical technology
- Uncertain future organization, finance, delivery
- Difficulty in distinguishing demand vs. need
- Lack of good or consistent data

Who should/would be responsible?
States Reporting Shortages

- Nevada, 2006
- Arizona, 2005
- Georgia, 2005
- Kentucky, 2005
- Massachusetts, 2005
- Michigan, 2005
- Oregon, 2005
- California, 2004
- Mississippi, 2004
- North Carolina, 2004
- Wisconsin, 2004
- Texas, 2002
Specialties Reporting Shortages
(relative to “need” or “demand”)

- Family Medicine, 2006
- Allergy and Immunology, 2004
- Cardiology, 2004
- Dermatology, 2004
- Medical Genetics, 2004
- Radiology, 2004
- Geriatric Medicine, 2003
- Neurosurgery, 2003
- Psychiatry, 2003
- Critical Care, 2006
- Pediatric Subspecialties, 2000
- Endocrinology, 2002

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Factors Influencing Future Supply

- Medical school production (MD, DO)
- International migration and IMG policies
- Aging of physician workforce & retirement
- Gender and generational differences
- Lifestyle choices
- Changing practice patterns
- Productivity changes (i.e. NPs/PAs, IT)

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U.S. Medical Schools, 1904—2004

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Medical School Graduates, 1904—2004

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Per-Capita MD Enrollment Has Fallen Since 1980
First Year Enrollment per 100,000

Source: AAMC Data Book; US Census Bureau.
Prepared by Center for Workforce Studies, AAMC, Feb 2006.
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US MDs Are Less Than 2/3 of Physicians Entering Graduate Medical Education, 2005

24,735* entered in ACGME and AOA training in 2005:

- Allopathic Graduates: 15,329 (62%)
- Osteopathic Graduates: 2,888+ (12%)
- IMGs: 6,436 (26%)
- Canadian Graduates: 65 (0.3%)

Other: 17 (0.1%)

* Includes both allopathic and osteopathic residents.
+ Number of DO graduates projected by AACOM. All the graduates are assumed to have entered ACGME or AOA GME.

Sources: AMA and AACOM, 2004 Annual Report on Osteopathic Medical Education
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Physician Workforce Age Distribution: 1985 and 2005

Source: AMA PCD for 1985 data; AMA Masterfile for 2005 data. Active physicians include residents/fellows
NOTE: 1985 data excludes 24,000 DOs.
Prepared by AAMC Center for Workforce Studies, Mar 2006
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One out of three would retire today if they could afford to

Percent of active physicians over 50 who would retire today, by age

Source: 2006 AAMC Survey of Physicians 50 and Older
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The Percent of Physicians That are Female Is Rising Steadily

Women more likely to work part time and more interested in part time work
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>

Not interested in working more hours to earn more money

Willing to work longer hours for more pay

66% NO

Would reduce hours if could afford to

80% YES

Currently working/interested in part-time hours

43% YES

Source: 2006 AAMC Survey of Physicians Under 50 (preliminary data)
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Factors Affecting Demand for Physicians

Aging & growth of population

Wealth of the nation

Public expectations

Growth in non-physician clinicians

New medical interventions

Evolution of care delivery

Cost containment efforts
Population Over Age 65 Doubles by 2030

United States Population Projection

Percent Growth from 2000

Year

Total Population 65+ Supply of Physicians

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Utilization of Services Rises with Age and Time

Center for Workforce Studies
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**Age-Specific Cancer Incidence Rates/100,000, 2000**

Source: CDC, Age-Specific Invasive Cancer Incidence Rates by Primary Site and Race, United States (U.S. Cancer Statistics, 2000). Prepared by AAMC Center for Workforce Studies © Copyright AAMC 2007. May not be reproduced without permission.
Future Supply and Demand: The Bottom Line

The gross physician to population ratio in the US will peak around 2020, even with expansion.

Effective supply of physicians likely to be lower as physicians work fewer hours.

The baby boom generation – with higher expectations - will begin to turn 70 years old in 2016, increasing per capita demand.
International Medical School Graduates (IMGs): Why the Concern Now?

- International concern about brain drain from less-developed to more-developed countries.
- Global shortage of human resources in health.
- Growth of off-shore for-profit schools primarily for US citizens but outside of US accrediting systems (15 new schools in the past decade)
- 1,500 US-IMGs entering GME annually.
- As many as 2,500 US-citizens each year now enter a foreign medical school.
Barriers to Expansion: 2006 Deans Survey

Available Scholarships: 49%
Classroom Space: 44%
Ambulatory Preceptors: 44%
Costs: 41%
Ambulatory Training Sites: 39%

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Active Physicians per 100,000

All Workforce Is Local

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Unmet Need Already Exists--30 million People Live in Federally Designated Shortage Areas

Primary Medical Care
Health Professional Shortage Areas (HPSAs)

HPSA Classification
- Whole County
- Partial County
- Does Not Meet Criteria
- Has Not Applied

Source: HRSA/AAFP
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### Number of Active Physicians in Michigan by Gender

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>Michigan</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Male</td>
<td>657,140</td>
<td>(72.8%)</td>
<td>19,564</td>
<td>71.6%</td>
</tr>
<tr>
<td>Female</td>
<td>244,913</td>
<td>(27.2%)</td>
<td>7,752</td>
<td>28.4%</td>
</tr>
<tr>
<td>Total</td>
<td>902,053</td>
<td>(100.0%)</td>
<td>27,316</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: AMA Physician Characteristics and Distribution in the US, 2007
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Physicians Per Capita (2005)

Physicians per 100,000 People

<table>
<thead>
<tr>
<th>State (Rank)</th>
<th>Number of Physicians/100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>245.6</td>
</tr>
<tr>
<td>Indiana (37)</td>
<td>243.4</td>
</tr>
<tr>
<td>Wisconsin (23)</td>
<td>220.0</td>
</tr>
<tr>
<td>Illinois (22)</td>
<td>210.0</td>
</tr>
<tr>
<td>Michigan (19)</td>
<td>200.0</td>
</tr>
<tr>
<td>Minnesota (18)</td>
<td>190.0</td>
</tr>
<tr>
<td>Ohio (17)</td>
<td>180.0</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>270.0</td>
</tr>
</tbody>
</table>

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*Includes active, federal and non-federal physicians who are not in graduate medical training/fellowship and are residing in the 50 States or District of Columbia.
IMGs as a Percentage of Active Physicians (2005)

Percent of Physicians that are IMG

State (Rank)

- United States
- Minnesota (34)
- Wisconsin (26)
- Indiana (20)
- Pennsylvania (16)
- Ohio (11)
- Michigan (7)
- Illinois (5)

Percent of Physicians

- 23.4%
- 26.9%

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Medical School Enrollment Per Capita (2003)

Medical School Enrollment by Type of School

- United States: 13.5
- Indiana (34): 26.6
- Minnesota (29): 26.6
- Wisconsin (23): 26.6
- Michigan (18): 21.3
- Ohio (13):
- Illinois (8):
- Pennsylvania (4): 0.0

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Medical Student Retention Rates (2005)

Medical Student Retention

Percent Medical Student Retention

State (Rank)


AMA Masterfile data: Includes DO, MD
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Proportion of MD Matriculants from In-State (2004)

Proportion of MD Matriculants from In-State

<table>
<thead>
<tr>
<th>State</th>
<th>Rank</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td></td>
<td>63.1%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>32</td>
<td>67.8%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

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Residents and Fellows in Training Per Capita (2005)

Residents and Fellows in Training per 100,000

State (Rank)

- US: 38.8
- Indiana (38)
- Wisconsin (23)
- Minnesota (11)
- Ohio (10)
- Michigan (9)
- Illinois (8)
- Pennsylvania (5)

AMA Physician MasterFile, January 2005

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Residents/Fellows who are IMGs (2004)

Residents/Fellows who are IMGs

Percent of Residents/Fellows who are IMG

State (Number of IMGs)

- US
- Indiana (1316)
- Minnesota (2109)
- Wisconsin (1545)
- Ohio (4757)
- Pennsylvania (6720)
- Illinois (5563)
- Michigan (4134)

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GME Retention (2005)

US: 47.6%
Minnesota (31): 46.1%
Pennsylvania (30): 46.1%
Ohio (26): 46.1%
Michigan (22): 46.1%
Wisconsin (20): 46.1%
Illinois (15): 46.1%
Indiana (6): 46.1%

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Proportion of Active Physicians who Completed In-State GME (2005)

Percent of Active Physicians who Completed In-State GME

44.7%

55.1%

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## Mean Scores for Applicants (2006)

<table>
<thead>
<tr>
<th>State</th>
<th>Verbal</th>
<th>Physical</th>
<th>Biological</th>
<th>Writing (Median)</th>
<th>Science GPA</th>
<th>GPA Total</th>
<th>Total Applicants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>9</td>
<td>9.1</td>
<td>9.4</td>
<td>O</td>
<td>3.34</td>
<td>3.45</td>
<td>1,844</td>
</tr>
<tr>
<td>Indiana</td>
<td>9.2</td>
<td>9.1</td>
<td>9.5</td>
<td>O</td>
<td>3.46</td>
<td>3.57</td>
<td>702</td>
</tr>
<tr>
<td>Michigan</td>
<td>8.9</td>
<td>9.3</td>
<td>9.7</td>
<td>O</td>
<td>3.37</td>
<td>3.48</td>
<td>1,347</td>
</tr>
<tr>
<td>Minnesota</td>
<td>9.3</td>
<td>9.4</td>
<td>9.7</td>
<td>P</td>
<td>3.42</td>
<td>3.52</td>
<td>761</td>
</tr>
<tr>
<td>Ohio</td>
<td>9</td>
<td>9</td>
<td>9.4</td>
<td>O</td>
<td>3.41</td>
<td>3.52</td>
<td>1,485</td>
</tr>
<tr>
<td>PA</td>
<td>9.2</td>
<td>9.3</td>
<td>9.7</td>
<td>P</td>
<td>3.4</td>
<td>3.5</td>
<td>1,423</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>9.4</td>
<td>9.4</td>
<td>9.9</td>
<td>P</td>
<td>3.49</td>
<td>3.57</td>
<td>680</td>
</tr>
<tr>
<td>All Applicants</td>
<td>9</td>
<td>9.1</td>
<td>9.5</td>
<td>O</td>
<td>3.38</td>
<td>3.48</td>
<td>39,108</td>
</tr>
</tbody>
</table>

Source: AAMC: Data Warehouse: Applicant Matriculant File as of 10/27/2006

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# Matriculant Data by State (2006)

<table>
<thead>
<tr>
<th>Applicants by State</th>
<th>Applicants</th>
<th>Matriculated In State</th>
<th>Matriculated Out of State</th>
<th>NOT Matriculated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,844</td>
<td>627</td>
<td>34</td>
<td>216</td>
</tr>
<tr>
<td>Indiana</td>
<td>702</td>
<td>240</td>
<td>34.2</td>
<td>90</td>
</tr>
<tr>
<td>Michigan</td>
<td>1,347</td>
<td>394</td>
<td>29.3</td>
<td>212</td>
</tr>
<tr>
<td>Minnesota</td>
<td>761</td>
<td>193</td>
<td>25.4</td>
<td>132</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,485</td>
<td>565</td>
<td>38</td>
<td>147</td>
</tr>
<tr>
<td>PA</td>
<td>1,423</td>
<td>438</td>
<td>30.8</td>
<td>237</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>680</td>
<td>213</td>
<td>31.3</td>
<td>104</td>
</tr>
<tr>
<td><strong>All Applicants</strong></td>
<td><strong>39,108</strong></td>
<td><strong>10,823</strong></td>
<td><strong>27.7</strong></td>
<td><strong>6,547</strong></td>
</tr>
</tbody>
</table>

Source: AAMC: Data Warehouse: Applicant Matriculant File as of 10/27/2006

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Medical Schools Under Discussion/Development

- Touro Florham Park, NJ
- Florida International Miami, FL
- Central Florida Orlando, FL
- Texas Tech El Paso, TX
- Univ. of California Riverside, CA
- Univ. of California Merced, CA
- Univ. of Arizona Phoenix, AZ
- Florida Atlantic Boca Raton, FL
- UMDNJ Camden, NJ
- Northeast Pennsylvania Scranton, PA
- Memorial Health Savannah, GA
- VA Tech Roanoke, VA

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UME Expansion Will Not Expand the Workforce Without Added GME Training

*ACGME & Osteopathic GME

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Growth in GME Slots, 1980--2005
Active Physicians per 100,000 Pop 2005 –2030
With and Without an Increase in MD Enrollment

Includes residents and fellows.
Prepared by Center for Workforce Studies, AAMC, Mar 2006.
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