Too Many Medical Schools, or Too Few Residency Positions?

MAME meeting
May 25 2011

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Disclosure

I have no relevant financial relationships with commercial interests that create a conflict of interest with respect to my role in this activity.
Index:
Prologue
Chapter I  The Rising Cost of Medical Education
Chapter II  Physician Manpower Needs
Chapter III  Medical School Expansion
Chapter IV  The Residency Bottleneck
Chapter V  The Law of Unintended Consequences
Chapter VI  Summary
Epilogue  A Personal Story

Acknowledgements

• Tom Gentile
• Buzz Cooper
• Mark Cummings
• Tom Drabek
• Paul Rockey
• AAMC Data/Publications
Prologue

No educational debts
Chapter I

The Rising Cost of Medical Education

Components of the Cost

- **Student (and family)**
  - Tuition
  - Books, computers, software
  - Living expenses
- **Clinical sites (hospitals and clinics)**
  - Supplies and equipment
  - Facilities
  - Time
- **Community faculty**
  - Loss of clinical income
  - Time
- **The community at large**
  - Increased medical insurance costs
  - Philanthropy
  - Community services
**Table 1**
Graduating Medical Student Debt (in dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Public</th>
<th></th>
<th>Private</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual Tuition and Fees</td>
<td>Total Debt</td>
<td>Annual Tuition and Fees</td>
<td>Total Debt</td>
</tr>
<tr>
<td>2001</td>
<td>12,411</td>
<td>86,000</td>
<td>31,296</td>
<td>120,000</td>
</tr>
<tr>
<td>2002</td>
<td>13,873</td>
<td>92,000</td>
<td>32,649</td>
<td>127,000</td>
</tr>
<tr>
<td>2003</td>
<td>16,332</td>
<td>100,000</td>
<td>34,247</td>
<td>135,000</td>
</tr>
<tr>
<td>2004</td>
<td>19,043</td>
<td>105,000</td>
<td>37,269</td>
<td>140,000</td>
</tr>
<tr>
<td>2005</td>
<td>20,370</td>
<td>115,000</td>
<td>39,024</td>
<td>150,000</td>
</tr>
<tr>
<td>2006</td>
<td>20,978</td>
<td>120,000</td>
<td>39,413</td>
<td>160,000</td>
</tr>
<tr>
<td>Annual Rate</td>
<td>11.1%</td>
<td>6.9%</td>
<td>4.7%</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Source: 2007 AAMC data
Consequences of Medical Student Debt

- Discourages disadvantaged applicants
- Most from top quintiles of parental income
- Decreases medical workforce diversity
- Decreases number choosing primary care

Chapter II

Physician manpower needs
U.S. Faces Shortage of Physicians

- COGME, AAMC, AAFP, Cooper et al. projected shortage of between 124,000 and 159,000 physicians by 2025
- HRSA projected deficit of 65,560 primary care physicians by 2020
- 2008 JAMA study projected an additional 21,000 residency positions needed by next decade
TREND MODEL
Physicians per capita and GDP

MSMS Blue Ribbon Report
2005
Chapter III

Medical School Expansion
Why so many new medical schools?

Doctor shortage

Economic benefit to the community
Economic Benefit of a New Medical School to the Community

$2B

Goods and services spending
- Payroll expenditures (medical schools only)
- FTE staff (medical schools only)
- Visitor spending
- Employee spending
- Physician spending
- Government revenue data/Tax revenue
- Business multiplier
- Employment multiplier

Intangible Benefits
- Prestige
- Political clout

---

Figure 3: Reported and Projected Growth from 2002-2020

*the data from these years reflects projections based on historical growth*
### Table 1: Summary of Baseline and Projected First Year Enrollment Through 2014

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Schools accredited as of 2002 (125)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># increase from 2002</td>
<td>1650</td>
<td>1961</td>
<td>2155</td>
<td>2250</td>
<td>2363</td>
<td>2515</td>
<td></td>
</tr>
<tr>
<td>% increase from 2002</td>
<td>10.0%</td>
<td>11.9%</td>
<td>13.1%</td>
<td>13.6%</td>
<td>14.3%</td>
<td>15.3%</td>
<td></td>
</tr>
<tr>
<td><strong>B. Accredited schools since 2002 (7)</strong></td>
<td>252</td>
<td>325</td>
<td>501</td>
<td>566</td>
<td>631</td>
<td>656</td>
<td></td>
</tr>
<tr>
<td><strong>C. Accredited schools as of 2010 (132) (A + B)</strong></td>
<td>16488</td>
<td>18390</td>
<td>18777</td>
<td>19144</td>
<td>19304</td>
<td>19482</td>
<td>19659</td>
</tr>
<tr>
<td><strong>D. Applicant and Candidate Schools (8)</strong></td>
<td>0</td>
<td>0</td>
<td>40</td>
<td>370</td>
<td>500</td>
<td>622</td>
<td></td>
</tr>
<tr>
<td><strong>E. Total (140) (A+B+D)</strong></td>
<td>16488</td>
<td>18390</td>
<td>18777</td>
<td>19184</td>
<td>19674</td>
<td>19982</td>
<td>20281</td>
</tr>
<tr>
<td># increase from 2002</td>
<td>1902</td>
<td>2280</td>
<td>2696</td>
<td>3186</td>
<td>3494</td>
<td>3793</td>
<td></td>
</tr>
<tr>
<td>% increase from 2002</td>
<td>11.5%</td>
<td>13.9%</td>
<td>16.4%</td>
<td>19.3%</td>
<td>21.2%</td>
<td>23%</td>
<td></td>
</tr>
</tbody>
</table>

*Note: “B” includes schools with “Preliminary Accreditation” status.

### Table 7: Combined Medical and Osteopathic Enrollment Growth and Increase above 2002

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enrollment</td>
<td>Enrollment</td>
<td># increase</td>
<td>% increase</td>
<td>Enrollment</td>
<td># increase</td>
<td>% increase</td>
</tr>
<tr>
<td>MD</td>
<td>16488</td>
<td>18390</td>
<td>1902</td>
<td>11.5%</td>
<td>20281</td>
<td>3793</td>
<td>23%</td>
</tr>
<tr>
<td>DO</td>
<td>3079</td>
<td>5104</td>
<td>2025</td>
<td>65.8%</td>
<td>6271</td>
<td>3192</td>
<td>103.7%</td>
</tr>
<tr>
<td>Total</td>
<td>19567</td>
<td>23494</td>
<td>3927</td>
<td>20.1%</td>
<td>26552</td>
<td>6985</td>
<td>35.7%</td>
</tr>
</tbody>
</table>
Michigan Medical Schools

- U of M 170
- WSU 300
  - Expanded class size
- MSU CHM 100 → 200
  - Doubled class size
- Oakland Beaumont 50
- Western 50
- Central 50 → 100
- MSU COM 200 → 300

Increasing numbers of medical students

Total 2014 medical school entering class size

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>770</td>
</tr>
<tr>
<td>2014</td>
<td>1120</td>
</tr>
</tbody>
</table>

........or 350 more medical students per year

......a 45% increase
More US Medical Students

Allopathic (M.D.) School Growth  Source: AAMC and AMA Physician Masterfile

Chapter IV

The Residency Bottleneck
Ensuring an Effective Physician Workforce for America: Recommendations for an Accountable Graduate Medical Education System

The graduate medical education (GME) system in this country is largely responsible for the nature of the physician workforce that exists today. Over the years, the system has produced a workforce composed of physicians who are well prepared to enter clinical practice in the specialty of their training, and one that has generally been considered to be appropriate both in its size and its specialty mix to meet the needs of the American public for medical care.

There are approximately 3,900 residency and fellowship positions available in Michigan hospitals and medical centers are held constant for each year of the forecast.
How Many Residents in Michigan?

• MSMS resident section: 4800 resident positions in Michigan.

• MAME survey: 6,246 residents in 49 teaching hospitals including allopathic and osteopathic programs.
  
Tom Drabek

What is the size of the entering GME class?

Using 3.5 years as the average length of training:

MSMS = 1370

MAME = 1785

Reminder: Total MI medical school graduates by 2016 = 1120
U.S. medical school graduates will fill approximately 80% of these positions; the rest will be filled by international medical graduates (IMGs).

**IMGs**
- US citizens training outside the US
- Graduates of non-US medical schools

**Proximity to Residency Training Program**
The zip code of the likely initial practice location was collected from each participant, as part of his or her basic demographic information. Based on the location of their residency training programs, more than half of the participants plan to initially practice within 10 miles of their training location. Fewer than 20% of the participants intend to practice more than 150 miles from their training location.

AAMC Center for Workforce Studies, November 2008
How important is residency training in Michigan to the State’s physician supply?

54% of all Michigan physicians completed their residencies and/or fellowships in Michigan and stayed to practice.

MSMS data

Pause for Thought

• The social contract
• The expense of medical education
• Need for an increased number of physicians
• Medical school expansion
• The residency pipeline
• Basic math?
Chapter V

The Law of Unintended Consequences

Part One

Impact on Medical Students
NRMP – the “Match”

Total national ACGME spots 120,000
Total national AOA spots 2,600
Total Michigan ACGME spots 4,800

Annual available Match positions
  NRMP positions 24,000
  Outside Match 2,500
  Total paid CMS spots 26,500

2016 Total estimated candidates
  MD 21,000
  DO 6,000
  IMG 3-6,000
  Total 33,000

Unmatched – an increasing trend

<table>
<thead>
<tr>
<th>Year</th>
<th>Unmatched US MD seniors</th>
<th>Unmatched prior US MDs</th>
<th>Unmatched US DO graduates</th>
<th>Unmatched total</th>
<th>Positions available in Scramble</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>883</td>
<td>663</td>
<td>531</td>
<td>2,077</td>
<td>1,300</td>
</tr>
<tr>
<td>2009</td>
<td>1,072</td>
<td>677</td>
<td>605</td>
<td>2,354</td>
<td>1,087</td>
</tr>
<tr>
<td>2010</td>
<td>1,078</td>
<td>747</td>
<td>601</td>
<td>2,426</td>
<td>1,060</td>
</tr>
<tr>
<td>2011</td>
<td>971</td>
<td>764</td>
<td>617</td>
<td>2,352</td>
<td>1,035</td>
</tr>
</tbody>
</table>
Unmatched Seniors, Unfilled Positions 2001-2010

Unfilled PGY-1 Positions

U.S. Seniors Unmatched to PGY-1 Positions

Unmatched Applicants 2010 NRMP

| 1,078 | Seniors, U.S. Allopathic Medical Schools |
| 747   | Previous Graduates, U.S. Allopathic Medical Schools |
| 601   | Students/Graduates, Osteopathic Medical Schools |
| 6     | Students/Graduates of Canadian Medical Schools |
| 1,946 | U.S. Citizen Students/Graduates of International Medical Schools |
| 4,365 | Non-U.S. Citizen Students/Graduates of International Medical Schools |
Part Two

Impact on Teachers

Is there an impending shortage of teachers?

Table 4A: Difficulties Related to Training Clinical Sites

<table>
<thead>
<tr>
<th></th>
<th>Very Concerned</th>
<th>Moderately Concerned</th>
<th>Not Concerned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Supply of Qualified Preceptors</td>
<td>13</td>
<td>11%</td>
<td>73</td>
</tr>
<tr>
<td>Number of Clinical Training Sites</td>
<td>12</td>
<td>10%</td>
<td>58</td>
</tr>
<tr>
<td>Volume or Diversity of Patients</td>
<td>3</td>
<td>3%</td>
<td>32</td>
</tr>
</tbody>
</table>
Part Three

Impact on the National Budget

He who pays the piper......

CMS contributes

$9.5B for GME positions
ACGME Accredited Program Growth
Number of Programs, 2001 - 2008

New Residency Positions

- 1966 Medicare open ended legislation
- The 1996 BBA and caps
- 2002 redistribution of unfilled spots
- New spots?
- How funded?
Transforming Graduate Medical Education to Improve Health Care Value

Glen Federaugh, J.D., and Cristina Bossetti, M.A., M.F.P.

U.S. health care is too expensive, and its quality is too inconsistent. To ensure that health care will be affordable for future generations and appropriate for an aging and growing population, it is critical that graduate medical education (GME) be reformed.

The New England Journal of Medicine
February 24, 2021

Medicare GME Payment and Public Accountability

Medicare invested $9.5 billion in GME in 2009. It is the single largest payer for GME, but it establishes minimal accountability for achieving education and training goals. MedPAC has therefore recommended that Congress authorize Medicare to use this financial leverage to catalyze more rapid GME reform by linking about one third of its GME dollars to programs' performance on newly developed measures.
Chapter VI

Quo Vadis?

Summary

• There will be a 23% increase in students graduating from allopathic medical students nationally if current expansion plans are completed.
• There will be a 100% increase in graduates of osteopathic medical schools nationally.
• There will be a 48% increase in the number of medical students graduating from Michigan medical schools.
• Medical school educational debt, now averaging $158,000, will continue to rise.
• As the number of medical students increases, the Match (NRMP) will leave increasing numbers of applicants without a post graduate position.
• The talents of these students will be lost to the medical profession at considerable cost to them, their families and the community.
• There is a physician shortage that will continue to grow.
• It is unlikely that Congress will authorize funding of additional residency positions in the short to intermediate term.
• The US needs a comprehensive physician workforce policy and programs to support it at every educational level.
Epilogue

The Doctor’s Dilemma