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# Results of the 2010 Medical School Enrollment Survey

Center for Workforce Studies

June 2011

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## Key Points

- First-year medical school enrollment in 2015-16 is projected to reach 21,041; 27.6 percent above first-year medical school enrollment in 2002-03.
- Most (62%) of the projected 2002-2015 growth will be in medical schools that were already accredited in 2002.
- Almost half (47.8%) of the 2002-2015 enrollment growth has already occurred, with 2,177 of the projected 4,553 new slots already in place as of 2010.
- Current projections indicate medical school enrollment is on track to reach the 30 percent targeted increase by 2016 or 2017, though only with the addition of seven schools still in applicant or candidate status.
- Between the 2002-03 and 2010-11 academic years, 100 of the 125 schools accredited in 2002 (80%) increased their enrollment, reflecting the extent of the response to the call for expansion.
- On the other hand, more schools in 2010 (52%) than in 2009 (39%) indicated concern with their ability to maintain or increase enrollment due to economic considerations.
- More than half of respondents (58%) indicated being concerned with the supply of qualified preceptors, and almost three-quarters (72%) indicated being concerned with the number of clinical training sites.
- There appears to be greater concern with the supply of qualified primary care preceptors compared to specialty care preceptors (78% and 54%, respectively).
- In response to growing concerns in the health policy community, 94 schools (75% of the 125 respondents) reported instituting or considering initiatives to encourage primary care.
- D.O. enrollment continues to rise very rapidly. First-year enrollment in 2015-16 is expected to reach 6,222, more than twice first-year enrollment in 2002.
- Combined first-year M.D. and D.O. enrollment in 2015-16 is projected to be 26,403, 35 percent above 2002-03.

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## Background

In 2006, in response to concerns of a likely future physician shortage, the AAMC recommended a 30 percent increase in U.S. medical school enrollment by 2015. This recommendation used the first-year enrollment of 16,488 students in 2002 as a baseline. A 30 percent increase would thus lead to 21,434 first-year medical students per year, an increase of 4,946.

The AAMC recommended this goal be met by increasing enrollment at existing medical schools and, where appropriate, the creation of new medical schools. The AAMC also recommended ongoing monitoring of supply and demand for physicians in order to continue to provide guidance to the medical education community and other interested parties.<sup>1</sup> The annual survey of medical school enrollment plans is part of the monitoring process.

In 2002, there were 125 medical schools. By early 2011, one additional existing school had received LCME accreditation (San Juan Bautista) and eight new medical schools had been granted preliminary accreditation status by the Liaison Committee on Medical Education (LCME; see Appendix), bringing the number of U.S. medical schools to 134.<sup>2</sup> In addition, as of March 11, 2011, seven new schools have been designated by the LCME as having “applicant school” or “candidate school” status. Although they cannot yet enroll students, some schools hope to receive “preliminary” accreditation in time to enroll students before 2012. Finally, discussions of the possibility of starting a new medical school have been reported in the media in at least eight communities where an application has not yet been made to the LCME. For purposes of this report, we have only included enrollment projections for the 134 schools that have received full or preliminary accreditation and the seven schools with LCME “applicant school” or “candidate school” status (refer to Appendix for details).

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## Methodology

The AAMC Center for Workforce Studies administered the seventh annual survey of medical school enrollment plans to the deans of 133 LCME-accredited or preliminarily accredited U.S. medical schools during the fall of 2010.<sup>3</sup> An e-mail introduction to the survey was sent, followed by a link to the Web-based survey itself. Follow-up reminder e-mails were sent to deans who did not initially respond. Of the schools surveyed, 127 (95%) responded, with information provided by the dean of the medical school or their designated appointee, most often an associate dean.

Respondents were asked to provide their medical school’s enrollment for the current year as well as their anticipated enrollment for the next five years, ending with the 2015-16 academic year. For schools that did not respond in 2010, first-year enrollment in 2010 from the AAMC records system was projected forward through 2015 with no change in class size. The enrollment information provided by the respondents was self-reported, though current year enrollment was validated with

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<sup>1</sup> AAMC Statement on the Physician Workforce (2006). Retrieved March 2, 2011, from [https://www.aamc.org/download/137022/data/aamc\\_workforce\\_position.pdf](https://www.aamc.org/download/137022/data/aamc_workforce_position.pdf)

<sup>2</sup> Institutions with Developing Medical Education Programs that have Applied for Preliminary Accreditation by the LCME (2011). Retrieved March 2, 2011, from <http://www.lcme.org/newschoolprocess.htm>

<sup>3</sup> The Charles E. Schmidt College of Medicine at Florida Atlantic University was not included in the initial 2010 survey as its preliminary accreditation status was granted after the survey was released. However, this school did provide planned enrollment figures via e-mail communication.

AAMC records.<sup>4</sup> Additionally, schools were queried about clerkship positions, and their efforts surrounding the promotion of primary care specialties.

For the seven schools with LCME “applicant school” or “candidate school” status, enrollment information on future enrollment plans was gathered from the institution’s Web site or via e-mail contact with the soon-to-be medical school’s dean.

Data were also received from the American Association of Osteopathic Colleges of Medicine (AACOM) on enrollment plans at osteopathic programs. The AACOM administered a similar survey instrument to 29 schools and received a 86.2 percent response rate.

## Enrollment Plans through 2015

Medical school enrollment has increased by 13.2 percent as of the 2010-11 academic year and is projected to increase by 27.6 percent by 2015. Almost half of the planned growth in 2015 (47.8 %) has already taken place, largely due to increases at the 125 LCME accredited schools in 2002. 100 of the original 125 have already increased their first-year enrollment<sup>5</sup> and collectively have plans to increase by another 1058 positions by 2015. Their enrollment plans account for nearly two-thirds of the projected increase above 2002 levels. Six of the nine schools that have been accredited since 2002 are already enrolling students as of 2010 and by 2015 expect to enroll nearly the same number of students as a group (857) as do the 7 schools that are currently LCME applicant and candidate schools (860). (Table 1, Figure 1).

**Table 1. Summary of Baseline and Projected First-year Enrollment to 2015**

	Base	Current	Projected				
	2002	2010	2011	2012	2013	2014	2015
A. Schools accredited as of 2002 (125)	16,488	18,266	18,561	18,764	19,083	19,226	19,324
# increase from 2002		1,778	2,073	2,276	2,595	2,738	2,836
% increase from 2002		10.8%	12.6%	13.8%	15.7%	16.6%	17.2%
B. Accredited schools since 2002 (9)*†		399	596	681	806	857	857
C. Accredited schools as of 2010 (134) (A + B)	16,488	18,665	19,157	19,445	19,889	20,083	20,181
# increase from 2002		2,177	2,669	2,957	3,401	3,595	3,693
% increase from 2002		13.2%	16.2%	17.9%	20.6%	21.8%	22.4%
D. Applicant and Candidate Schools (7)		0	0	80	680	770	860
E. Total (141) (A+B+D)	16,488	18,665	19,157	19,525	20,569	20,853	21,041
# increase from 2002		2,177	2,669	3,037	4,081	4,365	4,553
% increase from 2002		13.2%	16.2%	18.4%	24.8%	26.5%	27.6%

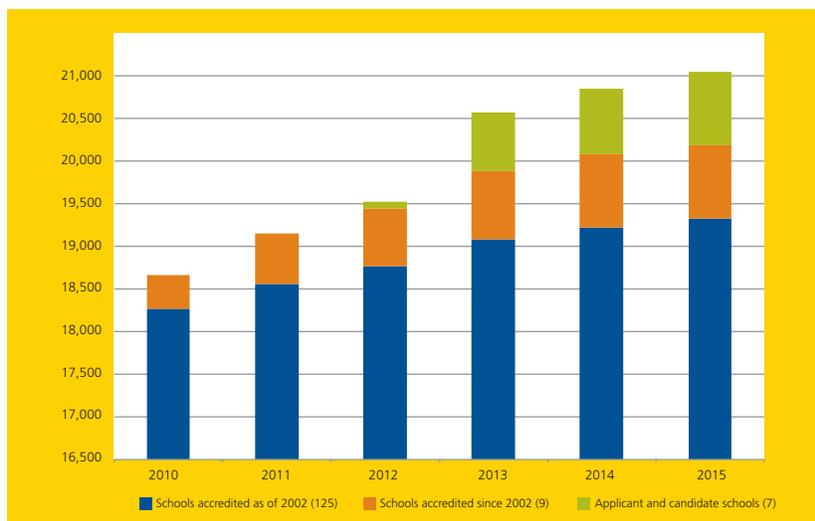
\* Data for Florida Atlantic University were gathered from their Web site, <http://med.fau.edu/medicine/admissions>. Retrieved March 16, 2011.

† Note: "B" includes preliminarily accredited schools.

<sup>4</sup> <https://www.aamc.org/download/161128/data/table1-facts2010school-web-pdf>. Retrieved March 16, 2011

<sup>5</sup> Some medical schools fluctuate by one student per class year, therefore, an increase is defined as enrolling two additional students.

**Figure 1. First-year Enrollment by School Accreditation Year/Status, 2010-2015**



## Distribution of Growth from the Existing 134 Medical Schools

Of the 3,693 projected new positions, since the 2002 enrollment, from the existing 134 medical schools, the majority (68%) would come from public schools. Regionally, the greatest growth in enrollment will take place in the south and the schools in that region will collectively account for nearly half (48%) of the projected increase in enrollment between now and 2015. (Table 2).

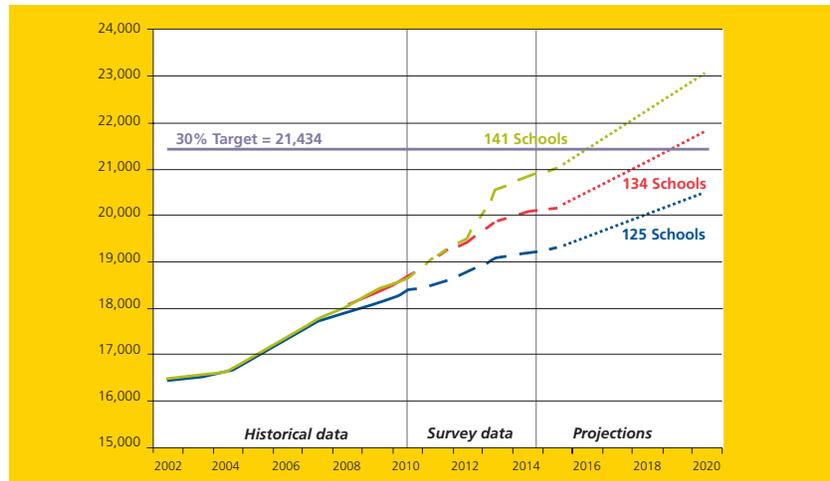
**Table 2. Distribution of Growth by Sponsorship and Region, 2002–2015**

	Baseline Enrollment 2002	Planned Enrollment 2015	# Increase from Baseline	% Increase from Baseline
<b>Total</b>	16,488	20,181	3,693	22%
<b>Institution Type</b>				
Private	6,217	7,715	1,498	24%
Public	10,271	12,466	2,195	21%
<b>Region</b>				
Central	4,497	5,276	779	17%
Northeast	5,021	5,644	623	12%
South	5,129	6,904	1,775	35%
West	1,841	2,357	516	28%

## Estimates Beyond 2015

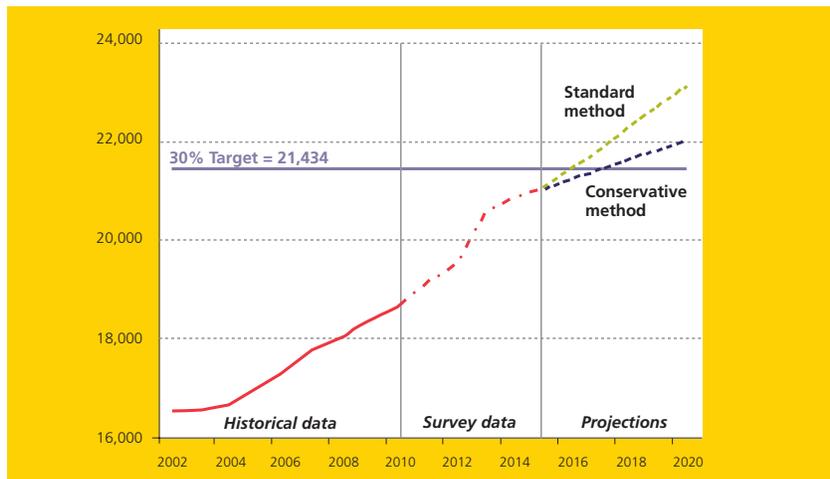
Estimating beyond 2015 (the last year of projected data from the survey) using the average annual growth rates<sup>6</sup> between 2002 and 2015, the existing schools plus the seven LCME candidate and applicant schools would reach the 30 percent target by 2016 (Figure 2). Without the additional schools in the pipeline, we would not reach the target until closer to 2019.

**Figure 2. Projections Based on Average Annual Growth from 2002 to 2015 Across All Medical Schools**



Because reported and projected enrollment changes vary across schools, especially as the economic environment shifts, we have expanded our projection efforts to include an additional methodology. The second set of projections uses the change in average reported planned enrollment per school using only the rate of change projected between 2014 to 2015. Using this more conservative method of applying only one year's rate of change, meeting the 30 percent increase is delayed until 2017 (Figure 3).

**Figure 3. Sensitivity Analysis of Enrollment Projections Through 2020**



<sup>6</sup> Separate average annual rates of growth were calculated for the three categories of schools: 1) the existing 125 schools as of 2002; 2) the nine schools that have received preliminary accreditation between 2002 and 2010; and 3) the seven current applicant and candidate schools as of February 2011.

## Clinical Opportunities for Students

The 2010 enrollment survey also included questions regarding concern for student clinical opportunities; results are compared to 2009 enrollment survey data where possible. Due to small cell sizes for some categories, the responses of “very concerned” or “moderately concerned” were combined. In 2009, 60 percent of respondents expressed concern regarding the supply of clinical clerkship positions available. One year later, concern about the supply of clerkship positions remained high at 72 percent (see Table 3). Three of four (74%) respondents to the 2009 survey indicated concern regarding the supply of qualified preceptors, which led to an expanded question on the 2010 survey splitting the question to ask separately about the supply of primary care and specialty preceptors. The 2010 responses showed 77 percent of deans were concerned regarding the supply of qualified primary care preceptors and 54 percent were concerned regarding the supply of qualified specialty preceptors. In 2009, 70 percent of medical school deans reported being “not concerned” with the volume and diversity of patients in the clinical opportunities for their students. This decreased nonsignificantly to 65 percent in 2010.

**Table 3. Concern Regarding Clinical Training Opportunities, 2009 and 2010**

<i>"Given current and planned enrollment, what is the level of concern regarding adequacy of clinical opportunities for students including:"</i>				
	<b>2009</b>	<b>2010</b>	<b>P-Value</b>	
Number of clinical training sites				
Concerned	60%	72%	0.061	
Not Concerned	40%	28%		
Supply of qualified preceptors				
Concerned	74%	n/a	n/a	
Not Concerned	26%	n/a		
Supply of qualified primary care preceptors				
Concerned	n/a	78%	n/a	
Not Concerned	n/a	22%		
Supply of qualified specialty preceptors				
Concerned	n/a	54%	n/a	
Not Concerned	n/a	46%		
Volume or diversity of patients				
Concerned	30%	35%	0.381	
Not Concerned	70%	65%		

## Economic Recession

In 2009, with economic conditions weakening, the following question was added: “How concerned are you that the current economic recession will limit your ability to keep your current enrollment level or limit your ability to increase enrollment?” In the 2010 survey, the question was altered slightly, rephrasing “current economic recession” to “current economic environment.” Table 4 shows that a greater share of respondents indicated they were concerned in 2010 than a year earlier.

**Table 4. Concern that Economic Recession/Environment Will Limit Ability to Keep Current or Increase Enrollment, 2009 and 2010**

	2009		2010		P-Value
	#	%	#	%	
<b>Concerned</b>	46	39%	66	52%	0.041
<b>Not concerned</b>	71	61%	60	48%	
<b>Total</b>	<b>117</b>	<b>100%</b>	<b>126</b>	<b>100%</b>	

## Primary Care

The 2010 survey included a question on efforts to encourage student interest in primary care. Respondents were asked to categorize each type of activity as “established (two years or more),” “recently implemented (under two years),” or “planned (within two years).” Of the 125 schools that responded to the survey, 75 percent indicated current or future plans to institute programs or policies to encourage student interest in primary care (Table 5A). Most of those 94 schools (87%) reported new or expanded extracurricular opportunities, while 74 percent reported new or expanded clinical rotations, 73 percent reported modified required clinical rotations, 71 percent reported modified pre-clinical curriculum, 67 percent reported refined admissions criteria, 60 percent reported expanded primary care faculty and/or resources, and 19 percent reported other activities (Table 5B).

Reports of recent or planned activities tended to focus more on extracurricular opportunities and elective clinical rotations, while those already established were most often reported for refined admissions criteria and required and elective clinical rotations.

**Table 5A. Primary Care Initiative**

<i>“Have you recently instituted or are you planning any specific new programs or policies designed to encourage student interest in primary care?”</i>		
	#	%
Yes	94	75%
No	31	25%

**Table 5B. Activities to Encourage Primary Care**

If yes, check all that apply*	Established (≥ 2 years)	Recently Implemented (≤ 2 years)	Planned (within next 2 years)
Refined admissions criteria	44%	9%	15%
Modified pre-clinical curriculum	40%	18%	13%
Modified required clinical rotations	43%	16%	15%
New or expanded extracurricular opportunities	28%	23%	23%
New or expanded elective clinical rotations	46%	24%	17%
Expanded primary care faculty and/or resources	29%	17%	14%
Other	6%	6%	6%

## Osteopathic Enrollment Projections

The American Association of Osteopathic Colleges of Medicine (AACOM) uses a survey similar to the AAMC's to collect their future enrollment figures. The 2010 new first-year enrollment at osteopathic schools (5,233) represent an increase of 70 percent from the baseline year of 2002. Further growth is expected, and by 2015, the AACOM projects a first-year enrollment of 6,222, or a 102 percent increase from 2002.<sup>7</sup> By 2015, the medical and osteopathic schools will have a combined increase of 35 percent, producing almost 7,000 more new doctors every year compared to 2002 (Table 6).

**Table 6. Medical and Osteopathic Actual and Projected First-year Enrollment Growth, 2002, 2010, and 2015 (existing schools only)**

	2002	2010			2015		
	Enrollment	Enrollment	# increase	% increase	Enrollment	# increase	% increase
M.D.	16,488	18,665	2,177	13%	20,181	3,693	22%
D.O.	3,079	5,233	2,154	70%	6,222	3,143	102%
Total	19,567	23,898	4,331	22%	26,403	6,836	35%

<sup>7</sup> Personal communication with AACOM.

## Discussion

In 2006, the AAMC recommended a 30 percent increase in medical school enrollment by 2015, and the nation is projected to come very close to meeting that mark. Medical schools have already increased enrollment 13.2 percent since 2002 and are projecting a 27.6 percent increase by 2015. If current trends continue, the nation could reach the 30 percent mark as early as 2016, though 2017 seems more likely. In addition, osteopathic growth continues at a rapid pace, with projected enrollment from the 2002 baseline doubling by 2015.

While there has been significant growth in the number of new medical schools since 2002, nearly two-thirds of the enrollment growth will come from the existing (as of 2002) 125 accredited medical schools. However, it is unlikely that these schools would reach 30 percent growth on their own. Newly accredited schools (those nine schools accredited after 2002) and the seven schools currently in LCME accreditation candidate or applicant status will add 39 percent of the projected new positions in 2020.<sup>8</sup>

These enrollment trends will need to be monitored closely, though, and considered in the context of phenomenal growth in osteopathic school enrollment, as well as that for other professions (such as physician assistants) in order to gauge how well the nation's needs are likely to be met by the available supply of providers of physician services. Recent data produced by the Lewin Group for the AAMC project a shortage of 91,500 physicians by 2020, after the Affordable Care Act (ACA) is implemented. Even without the ACA, the projected shortage for 2020 is still 64,100 physicians.<sup>9</sup> If these projections hold, then more than the projected enrollment growth will be needed. System efficiencies will need to be improved, and new delivery models will need to be developed.

Moreover, the economy is likely to continue to affect medical schools' expansion plans. More schools than last year—52 percent in 2010 versus 39 percent in 2009—are concerned that the current economic environment will limit their ability to maintain or increase enrollment. To the extent that plans continue to change, close attention will need to be paid to the effect the economic environment has on medical schools' expansion plans.

There can be little doubt that the medical education community has risen to the challenge of achieving the 30 percent growth in first-year medical school enrollment. Whether by 2015, 2016, or 2017, it currently appears that the goal will be met. However, it will be important to continue to track the country's progress toward 30 percent growth, as well as conduct a regular review of the need for that growth amidst other factors, including the availability of clerkship and graduate medical education positions, growth in osteopathic education, physician assistant and nurse practitioner enrollment, the economic climate, and changing demand for physician services such as when the newly insured enter the health care market in 2014.

<sup>8</sup> Historical data shows schools that are currently preliminarily accredited provided accurate enrollment estimates when they were listed by the LCME as applicant or candidate schools, thereby lending credence to current applicant and candidate school estimates.

<sup>9</sup> Association of American Medical Colleges (AAMC). 2010. *The Impact of Health Care Reform on the Future Supply and Demand for Physicians Updated Projections Through 2020*. Washington, DC: AAMC, June. [https://www.aamc.org/download/158076/data/updated\\_projections\\_through\\_2025.pdf](https://www.aamc.org/download/158076/data/updated_projections_through_2025.pdf)

**APPENDIX: SCHOOLS IN LCME ACCREDITATION PROCESS (AS OF 2/2/11)**

<b>Schools with Preliminary LCME Accreditation</b>
Charles E. Schmidt College of Medicine at Florida Atlantic University (Florida)
Florida International University College of Medicine (Florida)
Hofstra University School of Medicine (New York)
Texas Tech University Health Sciences Center Paul L. Foster School of Medicine (Texas)
The Commonwealth Medical College (Pennsylvania)
University of Central Florida College of Medicine (Florida)
Virginia Tech Carilion School of Medicine (Virginia)
Oakland University William Beaumont School of Medicine (Michigan)
<b>LCME Candidate Schools</b>
University of California Riverside (California)
Cooper Medical School of Rowan University (New Jersey)
<b>LCME Applicant Schools</b>
Central Michigan University School of Medicine (Michigan)
Quinnipiac University School of Medicine (Connecticut)
University of South Carolina School of Medicine, Greenville (South Carolina)
Palm Beach Medical College (Florida)
Western Michigan University (Michigan)



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