

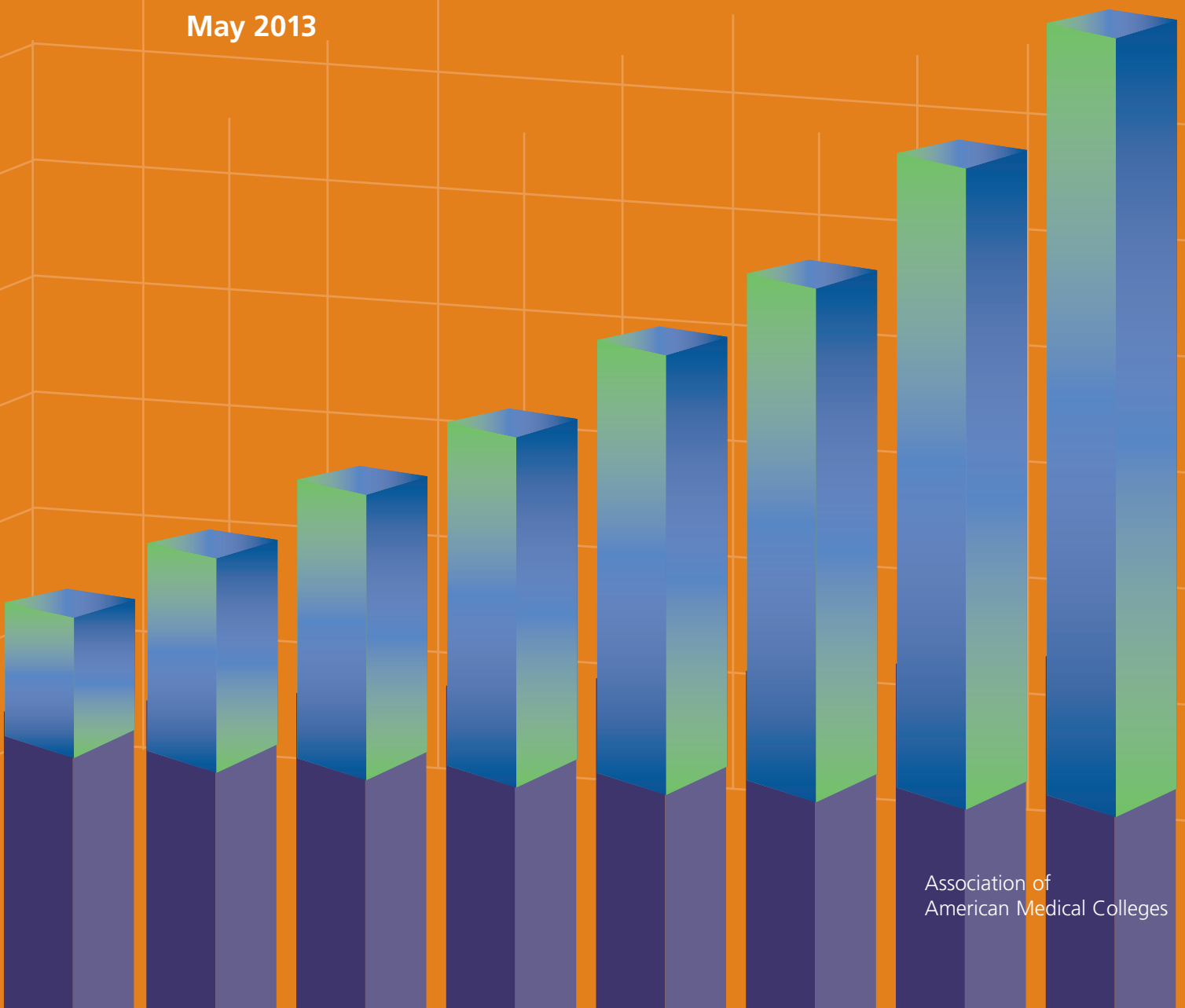


Tomorrow's Doctors, Tomorrow's Cures®

# Results of the 2012 Medical School Enrollment Survey

Center for Workforce Studies

May 2013



Association of  
American Medical Colleges

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## Acknowledgements

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The AAMC's Center for Workforce Studies welcomes your comments and suggestions for future editions of this report.

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## Executive Summary

This report, prepared by the AAMC's Center for Workforce Studies, is based on the AAMC's annual Survey of Medical School Enrollment Plans. The survey is part of an ongoing monitoring of enrollment trends. In 2006, in response to concerns of a likely future physician shortage, the AAMC recommended a 30 percent increase in medical school enrollment by 2015. Using the 2002-2003 first-year enrollment of 16,488 students as a baseline, this would lead to an increase of 4,946 students for a total of 21,434 students by 2015.

The survey is sent to deans at all accredited medical schools in the United States in the fall of each year. The report summarizes results from the survey, and uses survey data to project first-year medical school enrollment through 2020. The aim is to inform the academic medicine community and policymakers about trends and issues related to medical school enrollment.

First-year medical school enrollment in 2017-2018 is projected to reach 21,434—a 30 percent increase from 2002-2003. The 30 percent increase matches exactly the 2015 target recommended by the AAMC in 2006. Of the projected growth from 2002-2017, 62 percent will be at the 125 medical schools that were accredited as of 2002. New schools since 2002 will provide 31 percent of the growth, and the balance (7 percent) is expected to come from schools that are currently in LCME applicant-school standing.

Survey results show that the adequacy of clinical training opportunities for students may pose a challenge for medical schools. Seventy-eight percent of respondents expressed concern about the number of clinical training sites for students, 82 percent about the supply of qualified primary care preceptors, and 67 percent about the supply of qualified specialty preceptors.

Medical schools also reported concern about enrollment growth outpacing growth in graduate medical education (GME). Thirty-three percent of schools reported this as a “major concern” in their state and 42 percent as a “major concern” at the national level. However, only 14 percent of schools reported “major concern” about their incoming students' ability to find residency positions of their choice after medical school.

Seventy-six percent of schools said they had either established or recently implemented at least one initiative to increase student interest in primary care specialties. These efforts included changes in curriculum, extracurricular opportunities, expanded faculty resources and training, and changes in admissions criteria.

Osteopathic enrollment continues to rise rapidly with new first-year enrollment in 2017-2018 expected to reach 6,675, which represents a 125 percent increase from first-year enrollment in 2002-2003. Combined first-year M.D. and D.O. enrollment at current medical schools is projected to reach 28,109 by 2017-2018, an increase of 44 percent when compared to 2002-2003.

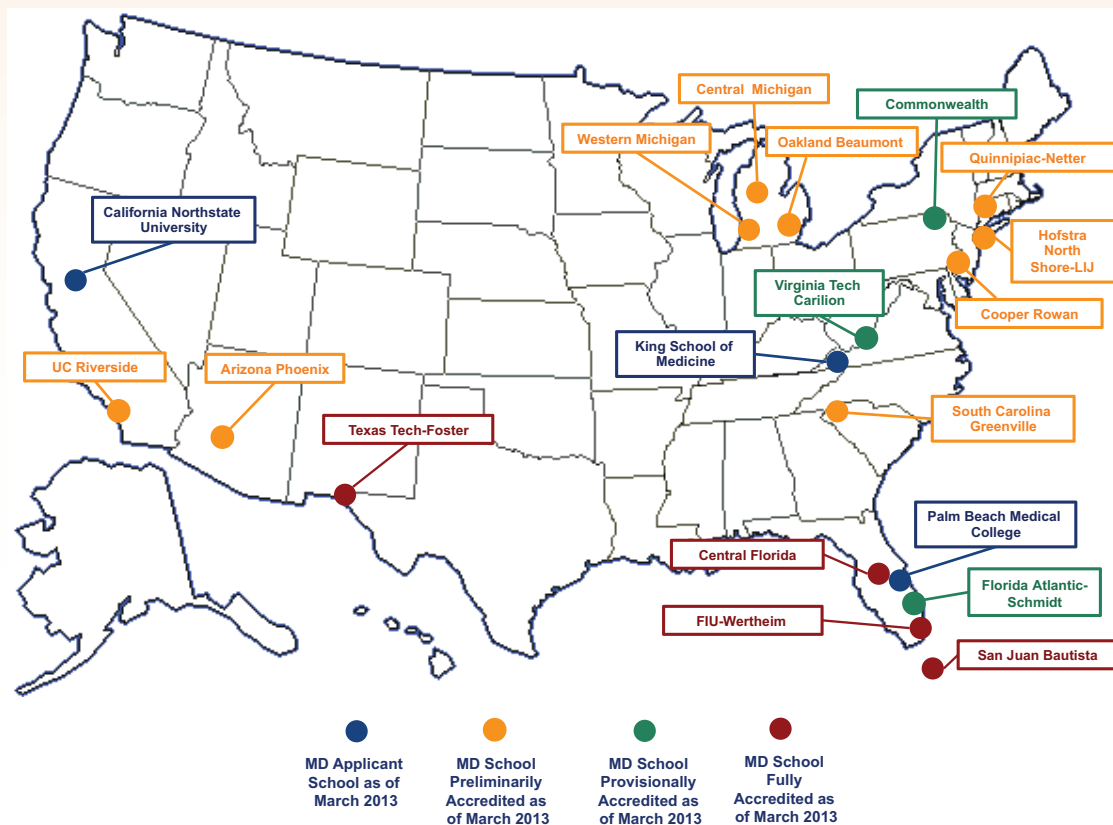
## Background

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. Using the first-year enrollment of 16,488 students in 2002 as a baseline, a 30 percent increase would mean 21,434 first-year medical students enrolling by 2015, an increase of 4,946 students.

The AAMC recommended this goal be met by increasing enrollment at existing medical schools and, where appropriate, by the creation of new medical schools. The AAMC also recommended ongoing monitoring of the supply of 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 accredited medical schools in the U.S. As of late March 2013, the Liaison Committee on Medical Education (LCME) had granted full, provisional, or preliminary accreditation status to 16 additional medical schools, for a total of 141 U.S. medical schools.<sup>2</sup> Also by late March 2013, the LCME had designated three new schools as having applicant-school status. Although

**Figure 1: New Medical Schools Accredited Since 2002 or in the LCME Accreditation Process**



*Note: There are no medical schools with LCME candidate-school status at this time. See Appendix I for further details.*

the applicant schools cannot yet enroll students, some of them hope to receive preliminary accreditation in time to enroll students in 2014 or 2015. Media reports suggest other schools are under consideration and may or may not enter the LCME accreditation pipeline.<sup>3,4,5,6,7</sup> For purposes of this report, we included enrollment projections for 141 schools that have received full, provisional, or preliminary accreditation, plus the three schools with LCME applicant-school status (see **Appendix** and **Figure 1**). There are no medical schools with LCME candidate-school status at this time.

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## Survey Methodology

The AAMC Center for Workforce Studies administered the ninth annual Survey of Medical School Enrollment Plans to the deans of 138 U.S. medical schools that were fully, provisionally, or preliminarily LCME-accredited at the time of the survey in September 2012. An email introduction to the survey was sent, which included a link to the Web-based survey. Follow-up emails were sent to the deans who did not initially respond. Of the schools surveyed, 130 responded (94 percent); survey information was provided by the dean of the medical school or a designated appointee, most often an associate dean.

Respondents were asked to provide their medical school's first-year enrollment for the current year as well as their anticipated enrollment for the next five years, ending with the 2017–2018 academic year. For schools that did not respond in 2012, enrollment numbers from the 2011 survey were used. The enrollment information provided by the respondents was self-reported, though current-year enrollment was validated with AAMC records.<sup>8</sup> Additionally, schools were queried about clerkship opportunities, expansion plans, and concerns about graduate medical education (GME).

For the three schools with LCME applicant-school status, information on future enrollment plans was gathered from the institution's Web site, via email, or phone contact with the institution's dean or admissions official.

Data were also obtained from the American Association of Colleges of Osteopathic Medicine (AACOM) on enrollment plans at osteopathic schools. Data were based on the AACOM Survey of College of Osteopathic Medicine Deans administered in January 2012 and incorporated plans for new schools' enrollment as well as schools currently in the accreditation process.

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- 1 AAMC, Statement on the Physician Workforce. 2006, <https://www.aamc.org/download/55458/data/workforceposition.pdf>. Accessed March 20, 2013.
  - 2 Liaison Committee on Medical Education. Developing Medical Education Programs. 2013. <http://www.lcme.org/newschoolprocess.htm>. Accessed March 20, 2013.
  - 3 Lloyd JR. UIW eyes opening med school. MySanAntonio.com, Dec. 16, 2012. <http://www.mysanantonio.com/news/education/article/UIW-contemplates-new-medical-school-4121252.php>. Accessed March 26, 2013.
  - 4 Mangan K. U. of Texas plans to merge 2 campuses and open a medical school in the Rio Grande Valley. The Chronicle of Higher Education, Dec. 6, 2012. <http://chronicle.com/article/U-of-Texas-Plans-to-Merge/136169/>. Accessed March 26, 2013.
  - 5 Mildenberg D. Dells pledge \$50 million to build Austin medical school. Bloomberg.com, Jan. 21, 2013. <http://www.bloomberg.com/news/2013-01-31/dells-pledge-50-million-to-build-austin-medical-school.html>. Accessed March 26, 2013.

## Results

### Current Enrollment and Trends in the Next Five Years

Medical school first-year enrollment increased by 18 percent over the 2002 level as of the 2012–2013 academic year and is projected to increase by 30 percent by 2017–2018. Increases at the 125 schools that were LCME-accredited as of 2002 will account for 62 percent of the projected growth in first-year enrollment between 2002 and 2017. Of the 16 schools that have been accredited since 2002, 11 were already enrolling students as of 2012, and by 2017 the 16 schools expect to enroll 1,508 entering students. The growth at these new schools since 2002 accounts for 31 percent of the overall 2002–2017 growth. Additionally, schools currently in LCME applicant status are projecting a first-year enrollment of 355 students by 2017, which represents the balance (7 percent) of growth in first-year enrollment between 2002–2017 (**Table 1**).

**Table 1: Summary of Baseline and Current First-Year Enrollment, and Projected First-Year Enrollment through 2017**

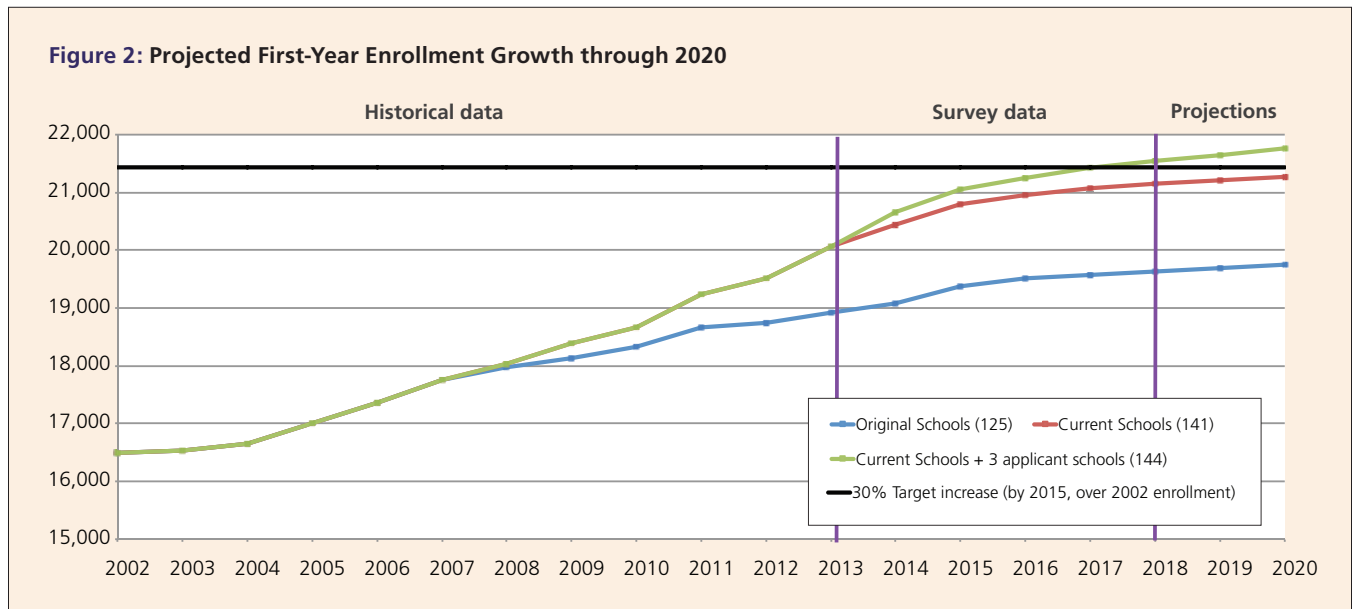
		Base	Current	Projected				
		2002	2012	2013	2014	2015	2016	2017
A.	Schools accredited as of 2002 (n=125)	16,488	18,746	18,913	19,082	19,370	19,514	19,571
	# increase from 2002		2,258	2,425	2,594	2,882	3,026	3,083
	% increase from 2002		13.7%	14.7%	15.7%	17.5%	18.4%	18.7%
B.	Schools accredited after 2002 (n=16)		771	1,146	1,350	1,430	1,449	1,508
C.	Currently accredited schools (n=141) (A + B)	16,488	19,517	20,059	20,432	20,800	20,963	21,079
	# increase from 2002		3,029	3,571	3,944	4,312	4,475	4,591
	% increase from 2002		18.4%	21.7%	23.9%	26.1%	27.1%	27.8%
D.	Applicant and Candidate Schools (3)		0	0	222	253	292	355
E.	Total (n=144) (A+B+D)	16,488	19,517	20,059	20,654	21,053	21,255	21,434
	# increase from 2002		3,029	3,571	4,166	4,565	4,767	4,946
	% increase from 2002		18.4%	21.7%	25.3%	27.7%	28.9%	30.0%

- 6 Muchmore S. TU scraps downtown building purchase for med school. *Tulsa World*. Feb. 15, 2013. [http://www.tulsaworld.com/news/article.aspx?subjectid=17&articleid=20130215\\_17\\_A11\\_TheUni53460](http://www.tulsaworld.com/news/article.aspx?subjectid=17&articleid=20130215_17_A11_TheUni53460). Accessed March 26, 2013.
- 7 Whitehurst L. Roseman University moves toward Nevada medical school. *The Salt Lake Tribune*. Dec. 17, 2012. <http://www.sltrib.com/sltrib/news/55482549-78/university-medical-utah-roseman.html.csp>. Accessed March 26, 2013.
- 8 AAMC FACTS, Table 7: Applicants, First-Time Applicants, Acceptees, and Matriculants to U.S. Medical Schools by Sex, 2001–2012, <https://www.aamc.org/download/321470/data/2012factstable7.pdf>. Accessed March 20, 2013.

## Projections Beyond 2017

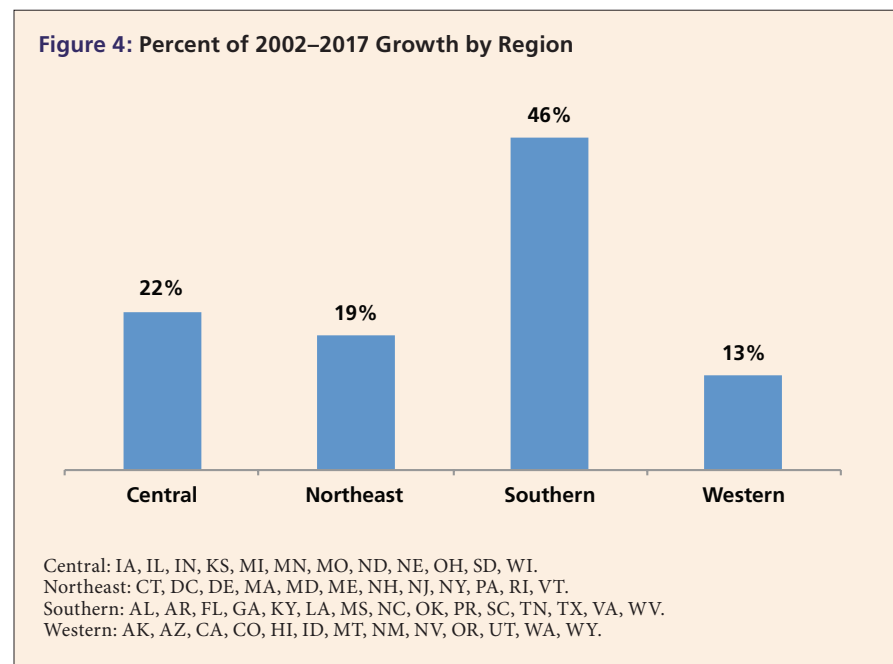
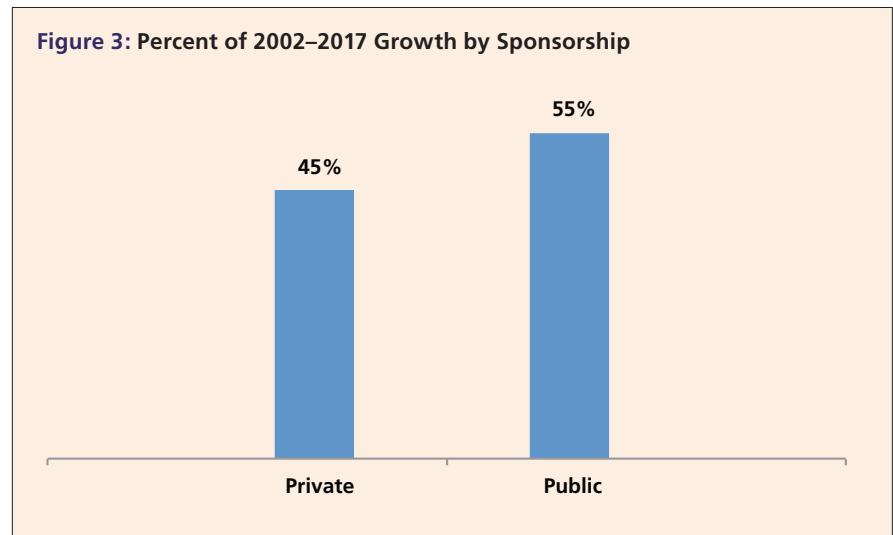
To project enrollment beyond 2017, the last year for which we requested enrollment data on the survey, a separate growth rate was employed for each category of school. For the 125 schools as of 2002, the rate of growth between the last two years of survey data (2016 to 2017), 0.29 percent, was projected forward for each year beyond 2017. For the 16 new schools since 2002, enrollment targets were available on the school Web site or in media accounts about the new school. For schools that expected to reach their target enrollment by 2017, no further growth was projected. For the two schools where the target in 2020 was higher than enrollment expected in 2017, we spread the additional growth evenly over the intervening years. Finally, for the three applicant schools, we obtained data from the schools on their estimated enrollment growth between 2017 and 2020 and divided that total anticipated increase in enrollment evenly over the three-year period.

The current 141 schools plus the three applicant schools are projected to reach a 30 percent increase in enrollment by 2017 (over the 2002 level). Without the three applicant schools currently in the pipeline, enrollment growth is not projected to reach the 30 percent target until after 2020 (**Figure 2**).



## Enrollment Growth by Sponsorship and Region

Of the 4,946 projected new positions by 2017, the majority (55 percent) are expected to come from public schools (**Figure 3**). Regionally, the greatest growth in enrollment will take place in the Southern region; schools there will collectively account for 46 percent of the projected increase in enrollment between 2002 and 2017 (**Figure 4**).



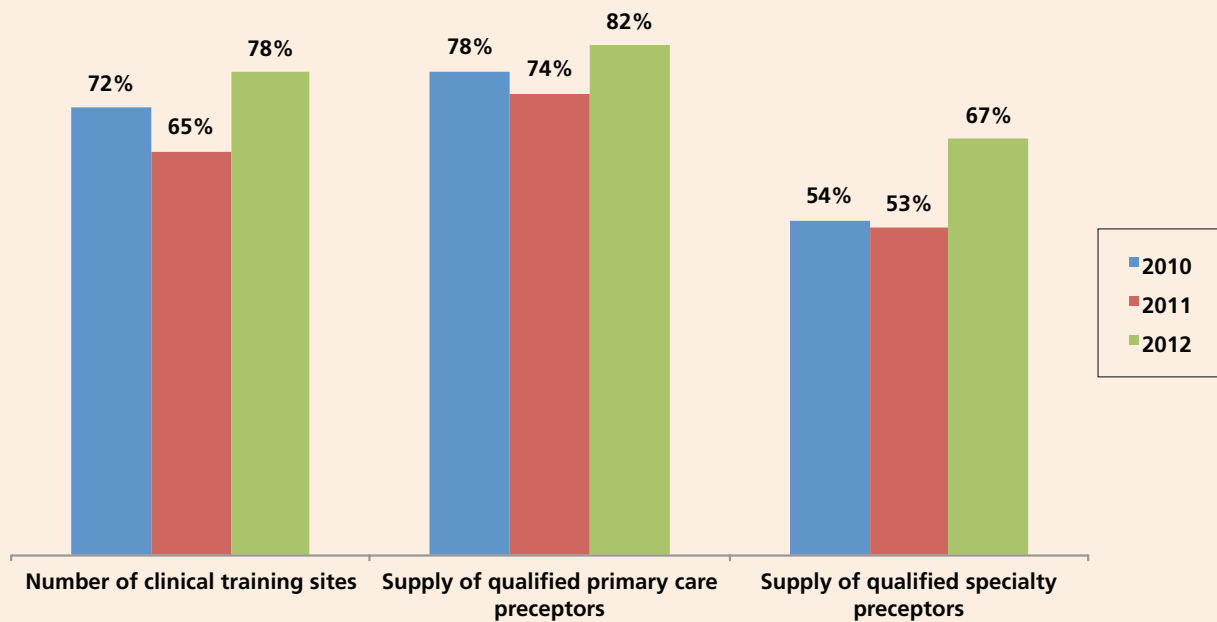


## Clinical Training Opportunities for Students

The 2012 survey included a question regarding concerns about student clinical training opportunities; results were compared with 2010 and 2011 survey responses (**Figure 5**). Due to small cell sizes for some categories, and to allow for comparison across survey years, the responses were collapsed into two categories: “concerned” and “not concerned.” In 2012, 78 percent of schools reported being concerned about the number of clinical training sites for students, 82 percent expressed concern about the supply of qualified primary care preceptors, and 67 percent had concerns about the supply of qualified specialty preceptors. Differences across the years were not statistically significant except for concern about the supply of qualified specialty preceptors ( $p = .035$ ).

The question also included a category for concern regarding the volume or diversity of patients. In 2010, 35 percent of schools reported being concerned about the volume or diversity of patients in the clinical opportunities for their students. In 2012, the question was modified to ask separately about inpatient volume and outpatient volume. 54 percent of schools reported being concerned about inpatient volume, while 62 percent of schools reported concern about outpatient volumes.

**Figure 5: Percent of Schools Concerned About Clinical Training Opportunities, 2010–2012**



The survey also asked respondents to report difficulties with their existing clinical training sites, such as challenges with volunteer physicians, competition from other schools, or payment pressure (**Table 2**). We compared responses to results from 2009 when we last asked this question. Schools reported statistically significant increases in competition from osteopathic medical schools for clinical training sites ( $p=.024$ ) and competition from other health care professionals such as NPs and PAs ( $p=.025$ )

**Table 2: Schools Experiencing Difficulties with Existing Clinical Training Sites, 2009 and 2012**

*“Have you recently experienced any of the following difficulties with your existing clinical training sites?”*

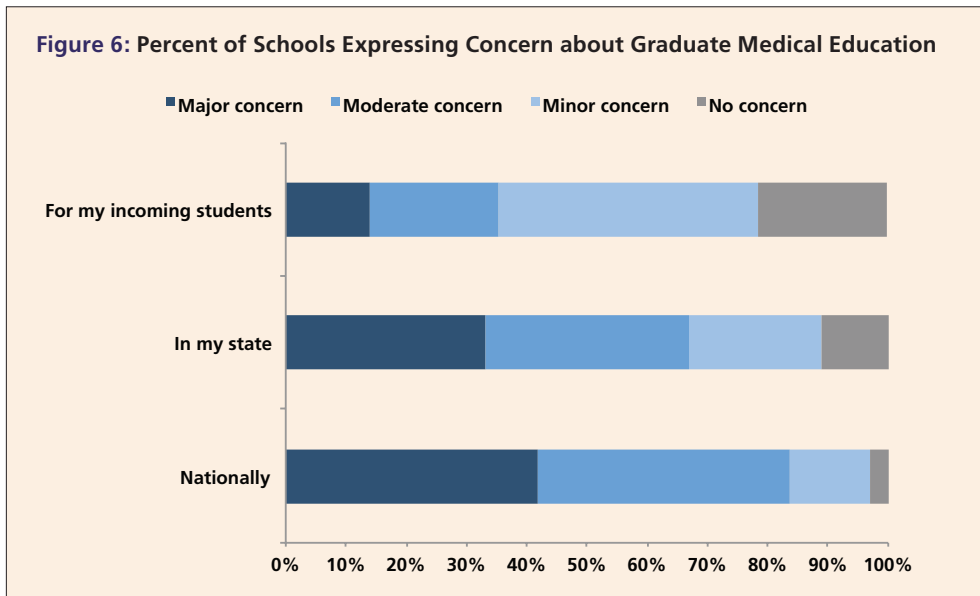
	2009		2012		p-value
	#	%	#	%	
High turnover among volunteer physicians	14	11%	19	15%	0.390
Difficulty in replacing retired physician volunteers	22	17%	23	18%	0.892
Competition from osteopathic medical schools for clinical training sites*	33	26%	51	39%	0.024
Competition from offshore medical schools for clinical training sites	22	17%	32	24%	0.134
Competition from other health care professionals (e.g., NPs, PAs)*	30	24%	48	37%	0.025
Pressure from existing clinical training sites regarding payment(s) for student rotations	40	32%	51	39%	0.228

\*Statistically significant (chi-square test)

## Concerns about Graduate Medical Education

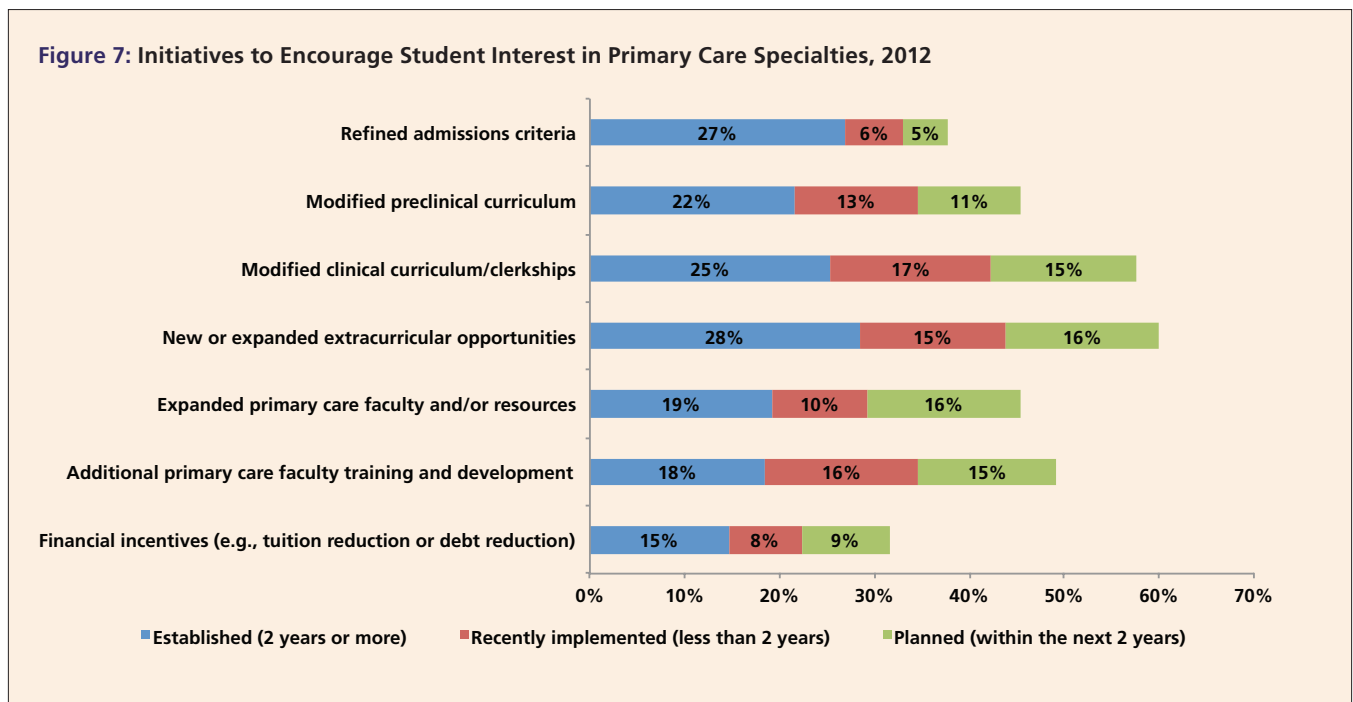
This year for the first time the survey asked two questions about concern regarding GME. The first question asked deans to consider their own students: “What is your level of concern about your incoming students’ ability to find a residency training position of their choice upon completion of medical school?” The second question broadened the scope to address the state and national levels, asking: “Now thinking more broadly, what is your level of concern that the overall expansion in medical school enrollment could produce more graduates than graduate medical education can accommodate?”

Respondents expressed concern about enrollment growth outpacing growth in GME (**Figure 6**). Thirty-three percent of schools reported this being a “major concern” in their state and 42 percent reported “major concern” at the national level. However, only 14 percent of schools reported “major concern” about their incoming students’ ability to find residency positions of their choice after medical school. The level of concern did not show any pattern by public/private status, region, or other school characteristics.



## Primary Care Initiatives

The survey also asked about programs or policies to encourage student interest in primary care specialties. We found that 76 percent of schools said they either had or were planning at least one initiative to increase student interest in primary care specialties. These efforts included changes in curriculum, extracurricular opportunities, expanded faculty resources and training, and changes in admissions criteria (Figure 7). This survey question was also asked in 2010. Of the 46 schools who stated in 2010 that they planned to establish primary care initiatives within the next two years, about one-third (35 percent) said by 2012 that they had recently implemented at least one initiative.



Note: Schools could select more than one initiative.

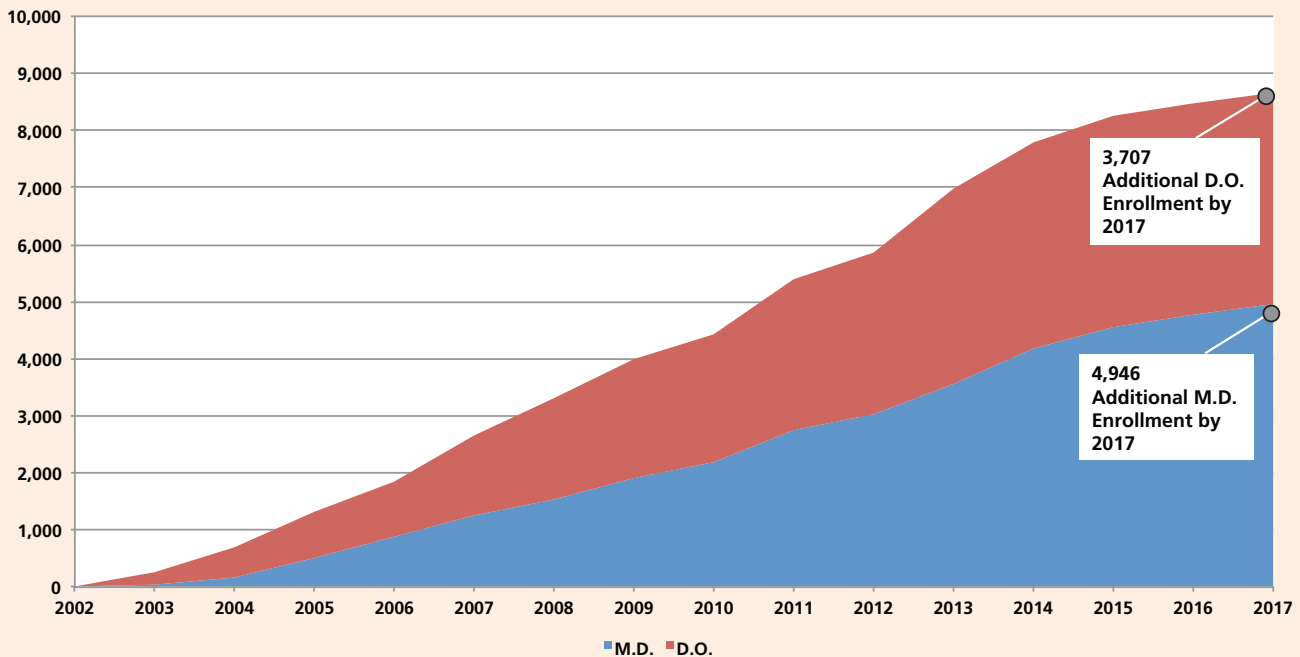
## Combined M.D. and D.O. Projections

The AACOM uses survey and accreditation data to project its future enrollment figures. The 2012 new first-year enrollment of 5,804 at osteopathic schools represents a 96 percent increase over enrollment in 2002. By 2017, AACOM estimates total new first-year enrollment will reach 6,675, which represents a 125 percent increase over 2002 first-year enrollment. By 2017, medical and osteopathic schools will have a combined increase of 44 percent, enrolling an additional 8,653 students in their first-year classes compared to 2002 (**Table 3; Figure 8**). Of that growth, 43 percent will come from osteopathic schools.

**Table 3: M.D. and D.O. Growth Since 2002**

	2002 Base	2012 Current		2017 Projected			
	Enrollment	Enrollment	# Increase	% Increase	Enrollment	# Increase	% Increase
M.D.	16,488	19,517	3,029	18%	21,434	4,946	30%
D.O.	2,968	5,804	2,836	96%	6,675	3,707	125%
<b>Total</b>	<b>19,456</b>	<b>25,321</b>	<b>5,865</b>	<b>30%</b>	<b>28,109</b>	<b>8,653</b>	<b>44%</b>

**Figure 8: M.D. and D.O. Growth Since 2002**



## Discussion

U.S. medical schools remain on track to meet the call for a 30 percent increase in enrollment. We project that first-year enrollment will hit the 30 percent target exactly in 2017 with 21,434 students. However, it is important to note that this projection depends on continued growth at many of the 125 medical schools accredited as of 2002, the 16 new schools accredited since 2002, and the three schools currently in applicant status with the LCME. A review of prior years' data revealed that since 2008, our annual enrollment projections have consistently predicted we will reach the 30 percent increase target between 2016 and 2018, with most predicting by 2016 to 2017.

GME is a growing concern for medical schools at the state and especially at the national levels. This is not surprising since the 2013 Residency Match was the second time there were more unmatched M.D. seniors than unfilled positions in the Match.<sup>9</sup> While the number of GME positions is still growing,<sup>10</sup> there are concerns about cuts in federal funding for GME and the impact this could have on available residency positions.<sup>11</sup>

Amid expected shortages of primary care physicians,<sup>12,13,14</sup> schools are implementing policies and programs designed to encourage student interest in primary care. The majority of schools said they have or plan to implement one or more initiatives such as changes in curriculum, extracurricular opportunities, or expanded faculty resources and training. While comparison of past survey results with those of this year shows that plans to implement such initiatives do not necessarily come to fruition within a two year window, 38 percent of schools have plans for the next two years.

Our survey results show ongoing concern over clinical training opportunities for students. Respondents are concerned about the number of sites, the supply of both primary care and specialty preceptors, and competition for clinical training sites. As other health professions are also growing, clerkship concerns are proving to be a broader issue. To explore this concern, the AAMC is conducting a joint survey in partnership with the American Association of Colleges of Nursing, American Association of Colleges of Osteopathic Medicine, and the Physician Assistant Education Association to explore clinical training issues in greater detail.

Continuing to track national medical school enrollment growth in future years will be critical. This is a time of great change in health care, with transformations and innovations such as team-based care and new payment models having direct and lasting consequences on the healthcare workforce needs of the future. Medical school enrollment trends are an early indicator of future physician workforce supply and play a vital role in informing policy decisions.

9 National Residency Matching Program, Advanced Data Tables: 2013 Main Residency Match, <http://www.nrmp.org/data/advanceddatatables2013.pdf>. Accessed March 27, 2013.

10 Jolly P, Erikson C, Garrison G. U.S. graduate medical education and physician specialty choice. *Academic Medicine*. 2012; 88:468-474.

11 AAMC, Preserving Funding for Graduate Medical Education, <https://www.aamc.org/initiatives/gmefunding/>. Accessed March 27, 2013.

12 Kirch DG, Henderson MK, Dill MJ. Physician workforce projections in an era of health care reform. *Annual Review of Medicine*. 2012;63:435-445.

13 Petterson SM, Liaw WR, Phillips RL, Jr, Rabin DL, Meyers DS, Bazemore AW. Projecting U.S. primary care physician workforce needs: 2010-2025. *Annals of Family Medicine*. Nov. 2012;10(6):503-509.

14 Huang ES, Finegold K. Seven million Americans live in areas where demand for primary care may exceed supply by more than 10 percent. *Health Affairs*. 2013; 32(3):1-8

## Appendix

### **New Schools Accredited Since 2002 or in the LCME Accreditation Process** (as of Late March 2013)<sup>15</sup>

#### **Fully Accredited Since 2002 (n=4)**

- Florida International University College of Medicine (Fla.)
- San Juan Bautista (P.R.)
- Texas Tech University Health Sciences Center Paul L. Foster School of Medicine (Texas)
- University of Central Florida College of Medicine (Fla.)

#### **Schools with Provisional Accreditation (n=3)**

Once provisional accreditation has been granted, students enrolled in the program may continue into their third and fourth years of medical education, and the program may continue to enroll new students.

- Charles E. Schmidt College of Medicine at Florida Atlantic University (Fla.)
- The Commonwealth Medical College (Pa.)
- Virginia Tech Carilion School of Medicine (Va.)

#### **Schools with Preliminary Accreditation (n=9)**

Once preliminary accreditation is granted, the program may begin to recruit applicants and accept applications for enrollment.

- Central Michigan University College of Medicine (Mich.)
- Cooper Medical School of Rowan University (N.J.)
- Hofstra University School of Medicine (N.Y.)
- Oakland University William Beaumont School of Medicine (Mich.)
- Quinnipiac University School of Medicine (Conn.)
- University of Arizona College of Medicine, Phoenix (Ariz.)
- University of California, Riverside (Calif.)
- University of South Carolina School of Medicine, Greenville (S.C.)
- Western Michigan University (Mich.)

#### **LCME Candidate Schools (n=0)**

Candidate Schools are not accredited and may not recruit or advertise for applicants or accept student applications.

*There are no medical schools with LCME candidate-school status at this time.*

#### **LCME Applicant Schools (n=3)**

Applicant Schools are not accredited and may not recruit or advertise for applicants or accept student applications.

- California Northstate University College of Medicine (Calif.)
- King School of Medicine and Health Science Center (Va.)
- Palm Beach Medical College (Fla.)

<sup>15</sup> Liaison Committee on Medical Education. Developing Medical Education Programs. 2013. <http://www.lcme.org/newschoolprocess.htm>. Accessed March 20, 2013.



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