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Results of the 2013 Medical School Enrollment Survey

Center for Workforce Studies

March 2014

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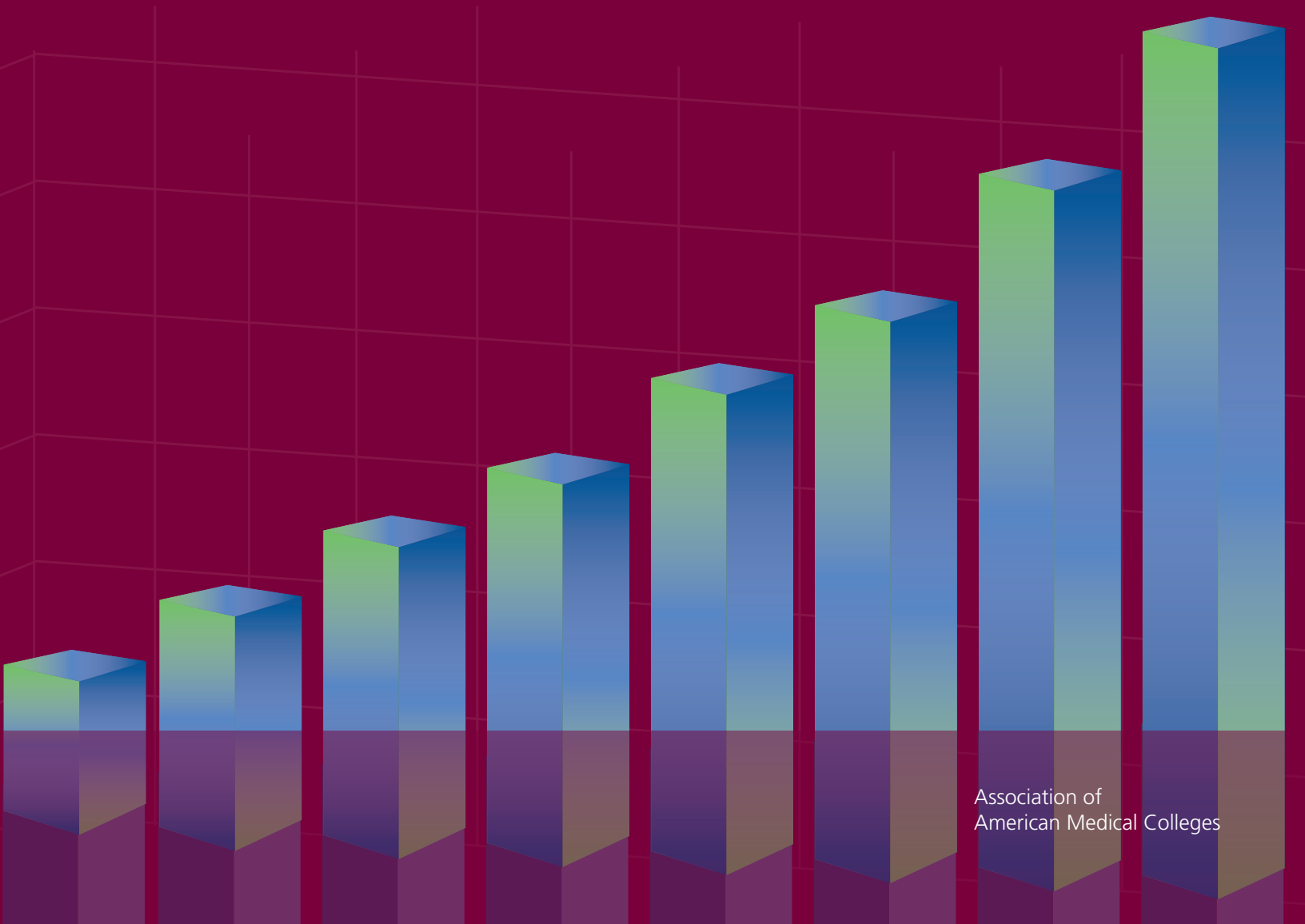

Association of
American Medical Colleges

Acknowledgements

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

Clese Erikson, Senior Director
AAMC Center for Workforce Studies
cerikson@aamc.org

Monica Whatley, Data Analyst
AAMC Center for Workforce Studies
mwhatley@aamc.org

Casey Tilton, Program Specialist
AAMC Center for Workforce Studies
ctilton@aamc.org

Executive Summary

This report projects first-year medical school enrollment through 2020 with the goal of informing the academic medicine community and policymakers about trends and issues related to U.S. medical school enrollment. The AAMC's Center for Workforce Studies prepared the report, which is based on the 10th annual AAMC Survey of Medical School Enrollment Plans. Each fall, the survey is sent to deans at all accredited M.D.-granting U.S. medical schools.

Key findings include:

- **The proposed 30 percent first-year enrollment increase will occur soon.** In 2006, in response to concerns of a likely future physician shortage, the AAMC recommended a 30 percent increase in first-year medical school enrollment by 2015. Using the baseline of the 2002–2003 first-year enrollment of 16,488 students, this meant an increase of 4,946 students, for a total of 21,434 entering students by 2015. The survey results project that first-year medical school enrollment in 2018–2019 will reach 21,349—a 29.5 percent increase over the 2002–2003 level and only 85 positions shy of the 30 percent target. Of the projected growth over this time frame, two-thirds will occur at the 125 medical schools that were accredited as of 2002. Newly accredited schools since 2002 will provide the remaining one-third of the growth.
- **Clinical training opportunities remain a concern.** Survey results indicate that the adequacy of clinical training opportunities for students may pose a challenge for medical schools. Seventy-nine percent of respondents expressed concern about the number of clinical training sites for students, 85 percent about the supply of qualified primary care preceptors, and 61 percent about the supply of qualified specialty preceptors.
- **The impact of enrollment growth on residency opportunities also is a concern.** Medical schools reported concern about enrollment growth outpacing growth in graduate medical education (GME). Seventy-six percent of schools reported this as a major or moderate concern in their state and 91 percent expressed similar concern at the national level. Slightly less than half (47 percent) reported major or moderate concern about their own incoming students' ability to find residency positions of their choice after medical school.
- **Increased enrollment at D.O.-granting schools continues apace.** Osteopathic enrollment continues to rise rapidly with new first-year enrollment in 2018–2019 expected to reach 6,958, a 134 percent increase from first-year enrollment in 2002–2003. Combined first-year enrollment at existing M.D.-granting and D.O.-granting medical schools is projected to reach 28,307 by 2018–2019, an increase of 45 percent compared with 2002–2003.

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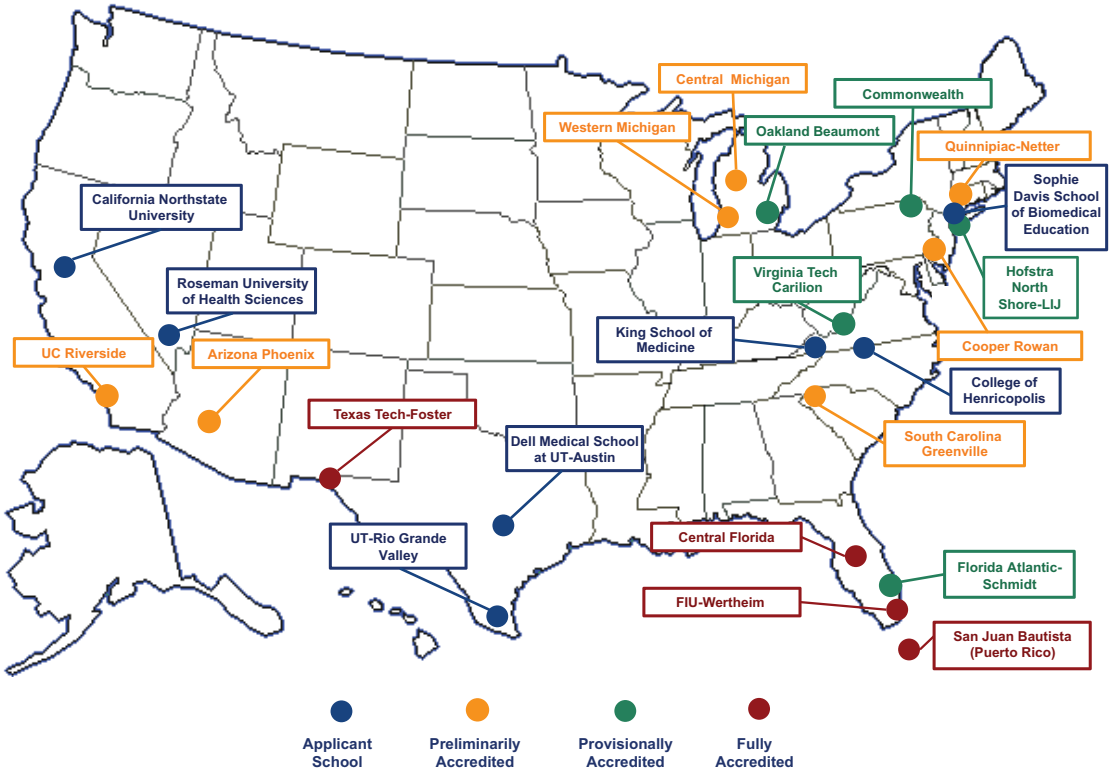
Background

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. 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.[1] The annual Survey of Medical School Enrollment Plans is part of that monitoring process.

In 2002, there were 125 accredited medical schools in the United States. As of March 2014, 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.[2] Each of these 16 new medical schools will have enrolled its charter class by the end of 2014. Also in March 2014,

Figure 1: New M.D.-Granting Medical Schools Accredited Since 2002 or in the LCME Accreditation Process (as of March 2014)



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

the LCME lists seven schools as having applicant status (**see Figure 1**). Although the applicant schools cannot yet enroll students, some of them intend to receive preliminary accreditation (the first level at which enrollment is permitted) in time to enroll students before 2020. There are no medical schools with LCME candidate-school status at this time. Media reports suggest other schools are under consideration and may or may not enter the LCME accreditation system.[3,4] For purposes of this report, we included enrollment projections for only the 141 schools that have received full, provisional, or preliminary accreditation as of March 2014.

Survey Methodology

The AAMC Center for Workforce Studies administered the 10th annual Survey of Medical School Enrollment Plans to the deans of 141 U.S. medical schools that were fully, provisionally, or preliminarily LCME-accredited in September 2013. An email introduction to the survey included a link to the Web-based survey. Deans who did not initially respond received follow-up emails. Of the schools surveyed, 127 responded (90 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 2018–2019 academic year. For schools that did not respond in 2013, enrollment numbers from the 2012 survey were used where available. For schools that did not respond in 2012 or 2013, current-year enrollment was substituted for each projected year. The enrollment information provided by the respondents was self-reported, though current-year enrollment was validated with AAMC records and substituted if it did not match.[5] Additionally, schools were queried about clerkship opportunities, concerns about graduate medical education (GME), and their efforts at targeting enrollment increases to specific population groups.

For the seven schools with LCME applicant-school status, information on future enrollment plans was gathered from the institution's website, via email, or by phone contact with the institution's dean or admissions official. These data were used to project the maximum enrollment expected in 2020.

Data also were 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 October 2013 and incorporated plans for new schools' enrollment as well as schools currently in the accreditation process.

1 AAMC. Statement on the Physician Workforce. June 2006. https://www.aamc.org/download/55458/data/workforceposition.pdf. Accessed Feb. 27, 2014.
2. Liaison Committee on Medical Education. Medical School Directory. 2014. http://www.lcme.org/directory.htm. Accessed Feb. 27, 2014.
3. Muchmore S. Tulsa School of Community Medicine seeks accreditation. Tulsa World. Oct. 24, 2013. http://www.tulsaworld.com/news/education/tulsa-school-of-community-medicine-seeks-accreditation/article_6d267e68-193d-5cd9-878e-8710b1854477.html. Accessed Feb. 27, 2014.
4. Takahashi P. Regents may shift gears on UNLV med school plans to appeal to Southern Nevada donors. Las Vegas Sun. March 7, 2014. http://lasvegassun.com/news/2014/mar/07/regents-may-shift-gears-unlv-med-school-plans-appe/. Accessed March 11, 2014.
5. AAMC FACTS, Table 7: Applicants, First-Time Applicants, Acceptees, and Matriculants to U.S. Medical Schools by Sex, 2001-2013, https://www.aamc.org/download/321470/data/2013factstable7.pdf. Accessed March 4, 2014.

Results

Current Enrollment and Trends in the Next Five Years

Medical school first-year enrollment increased by nearly 22 percent over the 2002 level as of the 2013–2014 academic year and is projected to increase by almost 30 percent by 2018–2019. Of the 125 schools that were accredited in 2002, 41 (33 percent) are projected to grow from 2014 to 2018. By comparison, six of the 16 schools accredited since 2002 (38 percent) are projected to grow during that period.

Increases at the 125 schools that were LCME-accredited in 2002 account for 66 percent of the projected growth in first-year enrollment between 2002 and 2018. Of the 16 schools that have been accredited since 2002, 15 were already enrolling students as of 2013, and by 2018 the 16 schools expect to collectively enroll 1,629 first-year students. The growth at these new schools since 2002 accounts for the remaining 34 percent of the overall 2002–2018 growth (**Table 1**).

Table 1: Summary of Baseline and Current First-Year Enrollment, and Projected First-Year Enrollment Through 2018

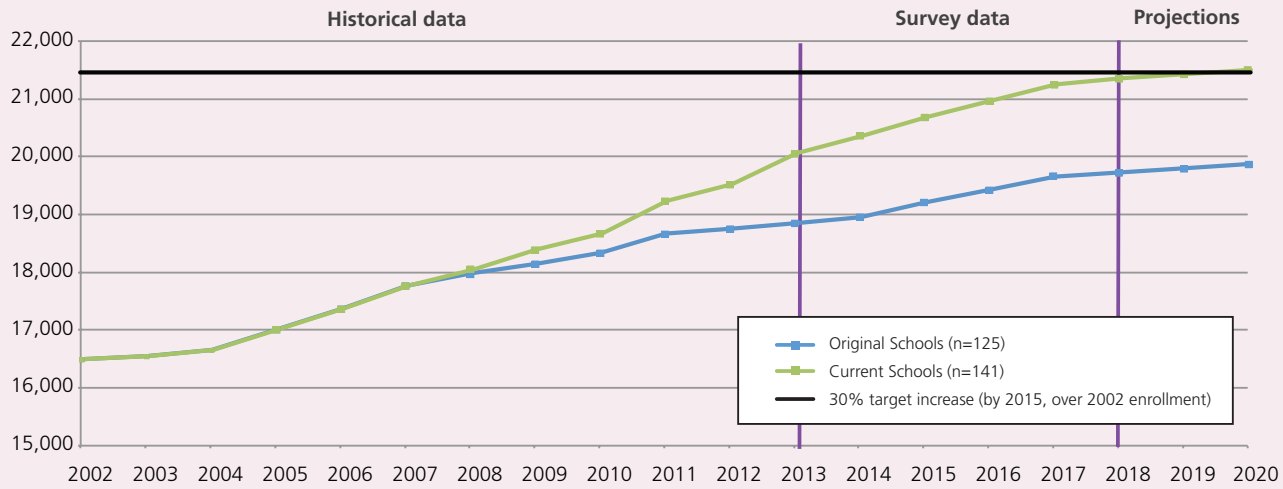
		Base	Current	Projected				
		2002	2013	2014	2015	2016	2017	2018
A.	Schools accredited as of 2002 (n=125)	16,488	18,841	18,945	19,202	19,420	19,647	19,720
	# increase from 2002		2,353	2,457	2,714	2,932	3,159	3,232
	% increase from 2002		14.3%	14.9%	16.5%	17.8%	19.2%	19.6%
B.	Schools accredited after 2002 (n=16)		1,214	1,405	1,476	1,542	1,598	1,629
C.	Total (n=141) (A + B)	16,488	20,055	20,350	20,678	20,962	21,245	21,349
	# increase from 2002		3,567	3,862	4,190	4,474	4,757	4,861
	% increase from 2002		21.6%	23.4%	25.4%	27.1%	28.9%	29.5%

Projections Beyond 2018

To project enrollment beyond 2018, 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 accredited as of 2002, the rate of growth between the last two years of survey data (2017 to 2018), 0.37 percent, was projected forward for each year beyond 2018. Seven of the 125 schools (6 percent) projected that they would grow from 2017 to 2018, whereas the remaining 94 percent of schools projected no growth during that period. For the 16 new schools since 2002, enrollment targets were available on the school's website or in media accounts about the new school. Since all 16 schools expected to reach their target enrollment by 2018, no further growth was projected, though three of the new schools since 2002 (19 percent) expected to grow between 2017 and 2018.

Cumulatively, the current 141 schools are projected to nearly reach the targeted 30 percent increase in enrollment by 2018 (over the 2002 level), and are projected to surpass the targeted enrollment by 2020. Additionally, the seven schools currently with LCME applicant status could add as many as 715 additional first-year students by 2020 if all seven schools are accredited and enroll students according to their plans as of February 2014.

Figure 2: Projected First-Year Enrollment Growth Through 2020



Enrollment Growth by Public/Private Status and Region

Of the 4,861 projected new medical school positions by 2018, the majority (62 percent) are expected to occur at public schools (**Figure 3**). Regionally, the greatest growth in enrollment will take place in the Southern region; schools there will collectively account for 44 percent of the projected increase in enrollment between 2002 and 2018 (**Figure 4**).

Figure 3: Percent of 2002–2018 Growth by Public/Private Status

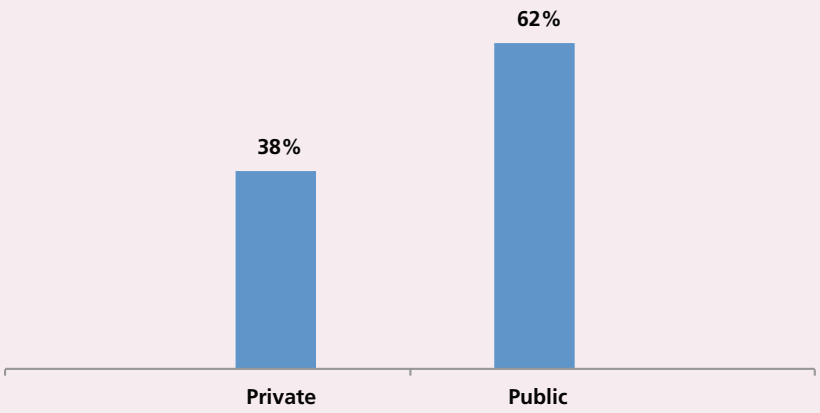
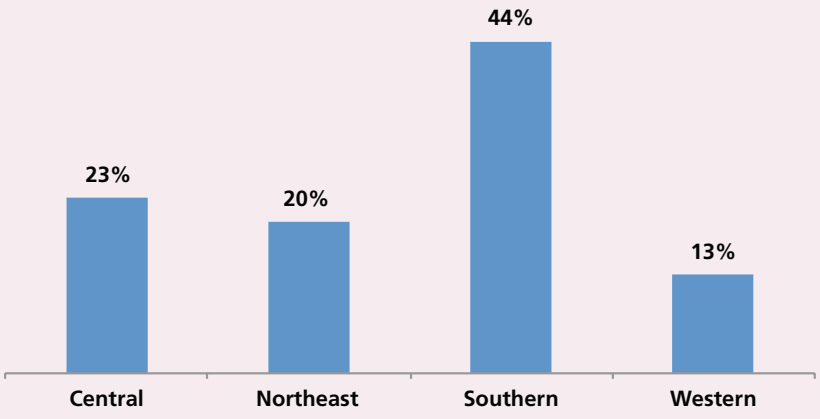


Figure 4: Percent of 2002–2018 Growth by Region

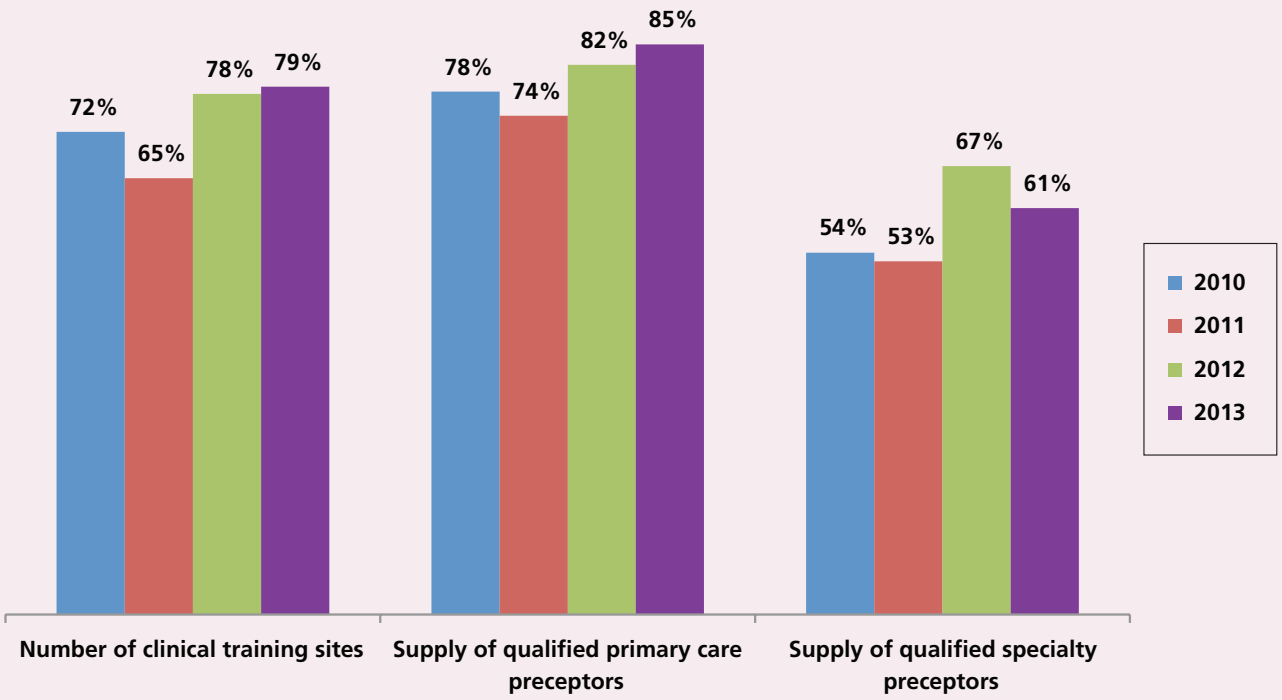


Central: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI
Northeast: CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VT
Southern: AL, AR, FL, GA, KY, LA, MS, NC, OK, PR, SC, TN, TX, VA, WV
Western: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

Clinical Training Opportunities for Students

The 2013 survey included a question regarding concerns about student clinical training opportunities; results were compared with survey responses from 2010 through 2012 (**Figure 5**). Because of 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 2013, 79 percent of schools reported being concerned about the number of clinical training sites for students, 85 percent expressed concern about the supply of qualified primary care preceptors, and 61 percent had concerns about the supply of qualified specialty preceptors.

Figure 5: Percent of Schools Concerned About Clinical Training Opportunities, 2010–2013



Note: Differences across years were not statistically significant.

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 2013 responses with results from 2009 when we first asked this question. Results show significant increases in the number of schools that reported competition for clinical training sites from osteopathic medical schools, offshore medical schools, and other health care professional programs (e.g., NPs, PAs). There was also a significant increase in the number of schools that reported pressure from existing clinical training sites regarding payment(s) for student rotations.

Table 2: Schools Experiencing Difficulties with Existing Clinical Training Sites, 2009 and 2013

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

	2009		2013		
	n=126		n=127		
	#	%	#	%	p-value
High turnover among volunteer physicians	14	11%	13	10%	0.839
Difficulty in replacing retired physician volunteers	22	17%	16	13%	0.316
Competition from osteopathic medical schools for clinical training sites*	33	26%	56	44%	0.003
Competition from offshore medical schools for clinical training sites*	22	17%	44	35%	0.001
Competition from other health care professionals (e.g., NPs, PAs)*	30	24%	55	43%	0.001
Pressure from existing clinical training sites regarding payment(s) for student rotations*	40	32%	65	51%	0.002

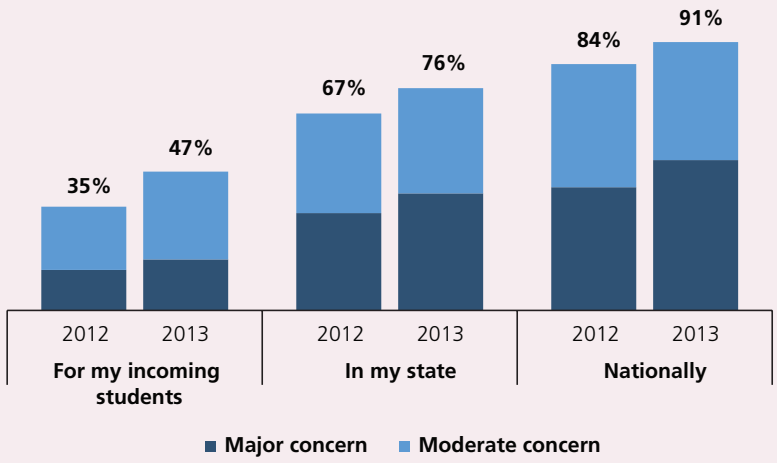
**Statistically significant (chi-square test)*

Graduate Medical Education Concerns

Starting in 2012, the survey included two questions about concerns regarding graduate medical education (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?" Response options were "no concern," "minor concern," "moderate concern," and "major concern."

Respondents expressed concern about enrollment growth outpacing growth in GME (**Figure 6**). Seventy-six percent of schools reported this being a "major" or "moderate" concern in their state compared with 91 percent at the national level. Slightly less than half (47 percent) reported "major" or "moderate" 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.

Figure 6: Percent of Schools Expressing Concern About Graduate Medical Education, 2012 and 2013

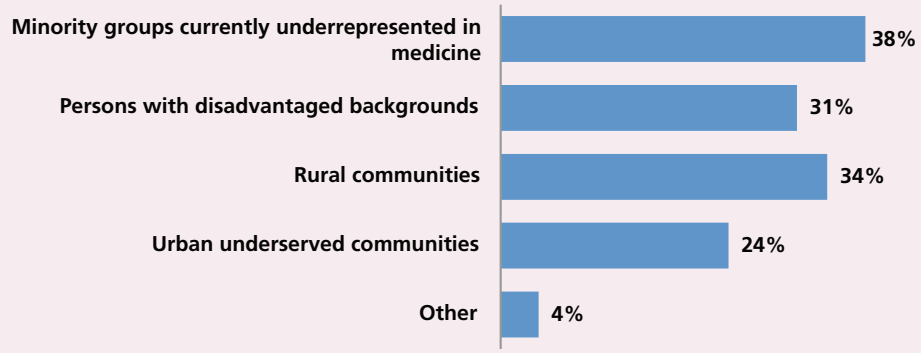


Note: Differences between 2012 and 2013 were not statistically significant.

Targeted Increases in Enrollment

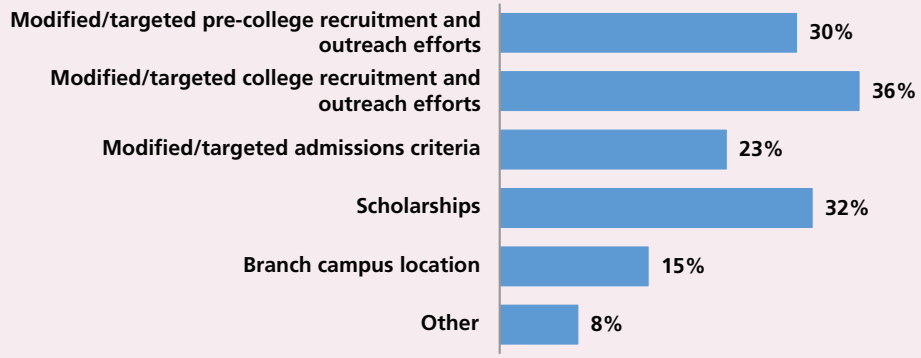
The enrollment survey this year included the following question: "Has any recent increase or planned increase in enrollment been targeted to specific population groups or to better meeting the needs of underserved communities?" Two subsequent questions asked what groups and/or communities were targeted and the method by which those groups were targeted. Of schools responding (n=127), 50 percent indicated they had targeted increases or planned increases in enrollment to specific population groups or to meeting the needs of underserved communities. A greater proportion of public schools (60 percent) than private schools (35 percent) indicated "Yes" to this question. **Figures 7** and **8** show the percentage of the 127 responding schools in 2013 that reported targeting each group and the method used. Note that the percentages represent percentage of all schools, not just those that indicated they had targeted increases in enrollment. Respondents could select more than one group. This set of questions was also asked in 2011 and the responses were similar.

Figure 7: Percent of Schools Targeting Enrollment Increases to Specific Groups and/or Communities



Note: Schools could select more than one option.

Figure 8: Percent of Schools Targeting Enrollment Increases to Specific Populations or Communities, by Approach



Note: Schools could select more than one option.

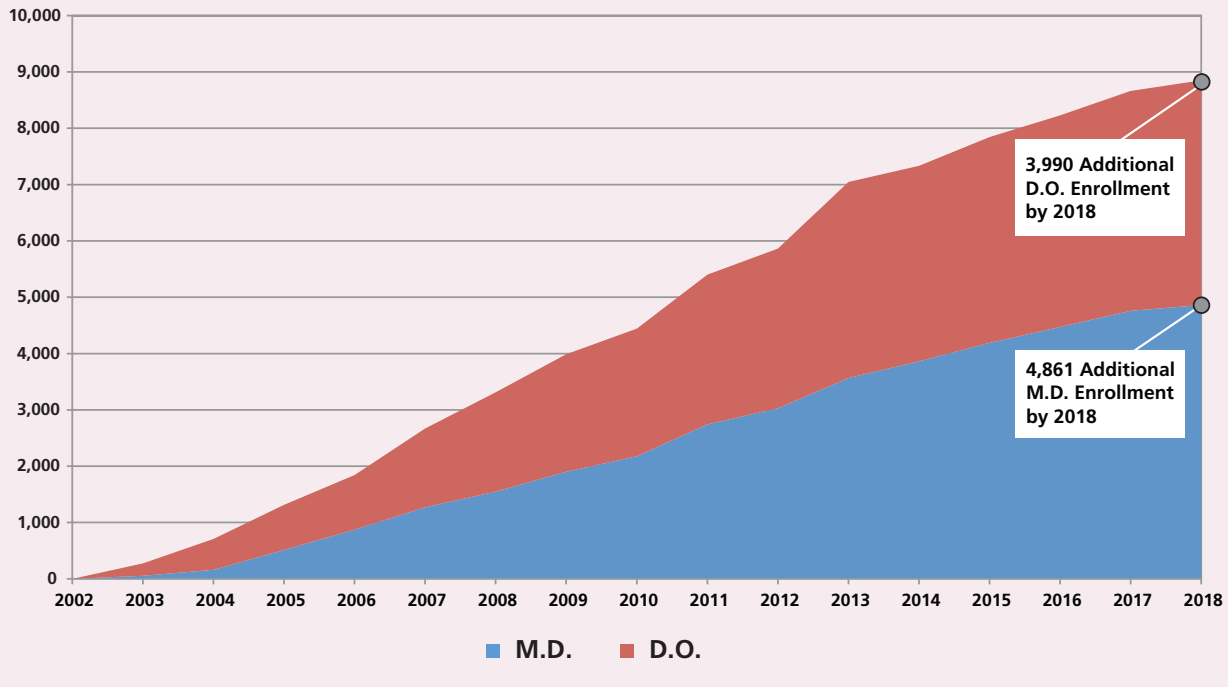
Combined M.D. and D.O. Projections

The AACOM uses survey and accreditation data to project its future enrollment. The 2013 new first-year enrollment of 6,449 at osteopathic schools represents a 117 percent increase over enrollment in 2002. AACOM estimates total new first-year enrollment will reach 6,958 by 2018, which represents a 134 percent increase over 2002 first-year enrollment. By 2018, M.D.-granting and D.O.-granting medical schools will have a combined increase of 45 percent, enrolling an additional 8,851 students in their first-year classes compared with 2002 (**Table 3**, **Figure 9**). Of that growth, 45 percent will come from osteopathic schools.

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

	2002 Base	2013 Current			2018 Projected		
	Enrollment	Enrollment	# Increase	% Increase	Enrollment	# Increase	% Increase
M.D.	16,488	20,055	3,567	22%	21,349	4,861	29%
D.O.	2,968	6,449	3,481	117%	6,958	3,990	134%
Total	19,456	26,504	7,048	36%	28,307	8,851	45%

Figure 9: M.D. and D.O. Growth Since 2002



Discussion

U.S. medical schools remain on track for a 30 percent increase in enrollment. We project that first-year enrollment at the 141 currently accredited schools will nearly reach the 30 percent target by 2018 and will likely surpass it by 2020. Unlike previous years, reaching this target does not depend on the enrollment plans of applicant schools. However, applicant schools could accelerate the timeline to reach the 30 percent goal, provided they attain at least preliminary accreditation. While most medical schools that were granted applicant status by the LCME since 2002 subsequently earned preliminary or higher accreditation status, it is difficult to know with certainty at what pace each school will progress through the accreditation process.

Graduate medical education (GME) continues to be a concern for medical schools at the state and especially at the national levels. While entry level residency positions are continuing to grow at a rate of about 1 percent a year, enrollment in undergraduate medical education is growing much faster.[6] In the current fiscal climate, the potential for cuts in federal funding for GME are of great concern to many in the medical education community.[7]

Our survey results show ongoing concerns over the clinical training opportunities for medical students. School administrators are concerned about the number of clerkship sites, the supply of both primary care and specialty preceptors, and competition for clinical training sites. From 2009 to 2013, the percentage of respondents experiencing competition from D.O.-granting medical schools, offshore medical schools, and other health care professional programs, as well as the share of respondents facing increased pressure to pay for student rotations in existing clinical trial sites, increased significantly.

Many medical schools are using enrollment growth as an opportunity to increase the diversity of the physician workforce and better meet the needs of underserved communities. Almost half of the schools indicated that they have created rural tracks or recruited minority groups and persons with disadvantaged backgrounds who are underrepresented in medicine. In alignment with the Supreme Court's June 2013 decision in *Fisher v. University of Texas at Austin*, the AAMC provides tools and resources for medical schools to create a more culturally competent physician workforce that is prepared to meet the health needs of an increasingly diverse nation and reduce the disparities that exist in today's health care system.[8] The AAMC also will continue to monitor medical school enrollment trends as part of its commitment to track the size and characteristics of the future physician workforce.

6. Jolly P, Erikson C, Garrison G. U.S. graduate medical education and physician specialty choice. Academic Medicine. 2012; 88:468-474.
7. AAMC, Preserving Funding for Graduate Medical Education, https://www.aamc.org/initiatives/gmefunding. Accessed March 27, 2013.
8. Resources include a podcast, an interactive webinar, and an update of the publication, Roadmap to Diversity: Key Legal and Educational Policy Foundations for Medical Schools, available online at https://www.aamc.org/initiatives/holisticreview.

Appendix

New Schools Accredited Since 2002 or in the LCME Accreditation Process

(as of March 2014)[9, 10]

Fully Accredited Since 2002 (n=4)

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

Schools with Provisional Accreditation (n=5)

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 (Florida)
- Hofstra University School of Medicine (New York)
- Oakland University William Beaumont School of Medicine (Michigan)
- The Commonwealth Medical College (Pennsylvania)
- Virginia Tech Carilion School of Medicine (Virginia)

Schools with Preliminary Accreditation (n=7)

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

- Central Michigan University College of Medicine (Michigan)
- Cooper Medical School of Rowan University (New Jersey)
- Quinnipiac University School of Medicine (Connecticut)
- University of Arizona College of Medicine, Phoenix (Arizona)
- University of California, Riverside (California)
- University of South Carolina School of Medicine, Greenville (South Carolina)
- Western Michigan University School of Medicine (Michigan)

Schools with Candidate Status (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.

Schools with Applicant Status (n=7)

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

- California Northstate University College of Medicine (California)
- Dell Medical School at the University of Texas at Austin (Texas)
- College of Henricopolis School of Medicine (Virginia)
- King School of Medicine and Health Science Center (Virginia)
- Roseman University of Health Sciences College of Medicine (Nevada)
- Sophie Davis School of Biomedical Education (New York)
- University of Texas Rio Grande Valley School of Medicine (Texas)

9. View the Glossary of LCME Accreditation Terminology for full definitions of each accreditation status. http://www.lcme.org/survey-connect-glossary.htm.
10. Liaison Committee on Medical Education. Medical School Directory. 2014. http://www.lcme.org/directory.htm. Accessed March 10, 2014.

Association of
American Medical Colleges
2450 N Street, N.W., Washington, D.C. 20037-1127
T 202 828 0400 **F** 202 828 1125
www.aamc.org