

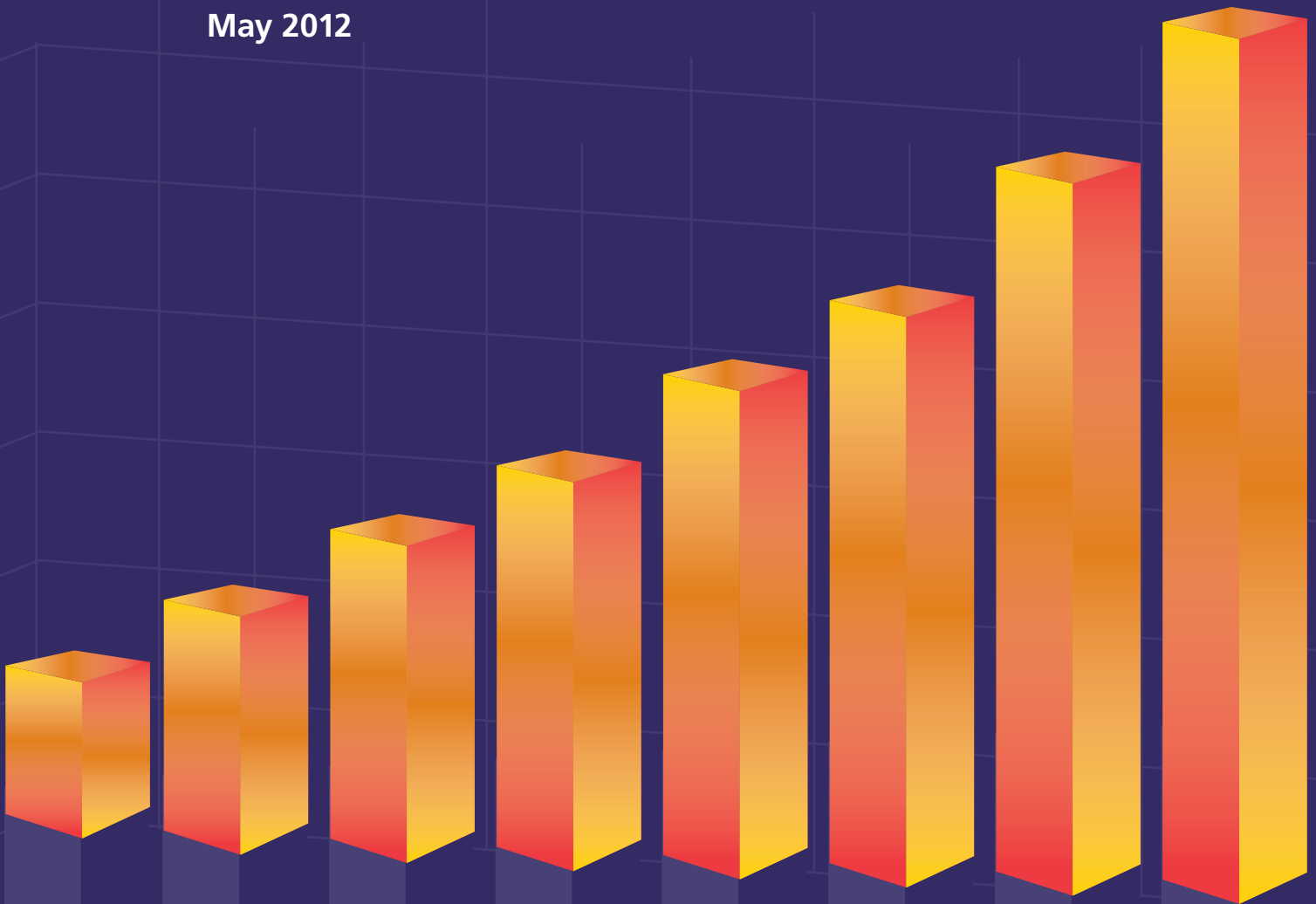


Tomorrow's Doctors, Tomorrow's Cures®

Results of the 2011 Medical School Enrollment Survey

Center for Workforce Studies

May 2012



Association of
American Medical Colleges

Acknowledgements

The 2011 Medical School Enrollment Survey represents the collaborative effort of several people. We are especially grateful to the deans and administration of the medical schools for their participation in the survey, and to John Prescott and Ann Steinecke for their assistance with outreach to deans. Data on earlier years' enrollment were provided by Lingling Xie, and data on osteopathic enrollment were provided by Tom Levitan. Data on schools not included in the survey were collected by Stacie Harbuck. Sana Danish managed the survey data collection and analysis and prepared the report.

We also owe special thanks to the AAMC Creative Services team for their work on design and copyediting, to Marie Caulfield for her gracious help with the survey software, to Casey Tilton for prompt assistance with select requests, and to the AAMC Center for Workforce Studies staff for providing valuable feedback on methodology and report drafts.

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

Please send comments, suggestions, or questions to:

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

Highlights

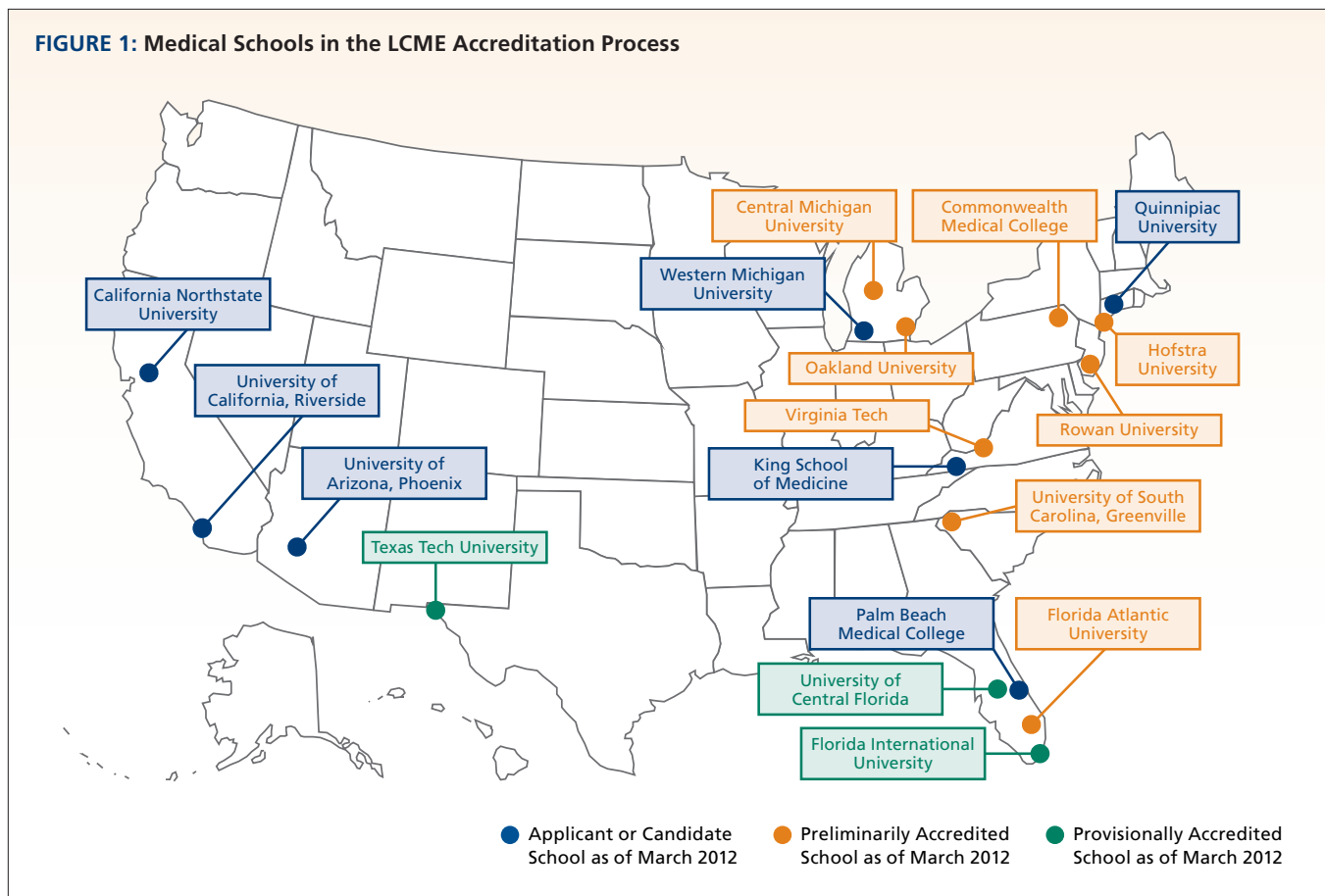
- First-year medical school enrollment in 2016–2017 is projected to reach 21,376. This projection represents a 29.6% increase above first-year enrollment in 2002–2003 and comes close to reaching the 30% targeted increase by 2015 the AAMC called for in 2006.
- Of the projected 2002–2016 growth, 58% will be at the 125 medical schools that were accredited as of 2002. New schools since 2002 will experience 25% of the growth, and the balance (17%) will come from schools that are currently in LCME applicant- or candidate-school standing.
- More than half (56%) of the 2002–2016 enrollment growth has already occurred, with 2,850 of the projected 4,888 new slots already in place as of 2011.
- Of schools surveyed in 2011, 43% indicated they had targeted increases or planned to target increases in enrollment to specific population groups or to meeting the needs of underserved communities.
- The supply of qualified primary care preceptors concerned 74% of schools, while 53% indicated concern with the supply of qualified specialty preceptors.
- Of schools surveyed in 2011, 52% indicated concern with their ability to maintain or increase enrollment due to the economic environment, a figure that held steady from the previous year.
- D.O. enrollment continues to rise rapidly. New first-year enrollment in 2016–2017 is expected to reach 6,179, representing a doubling of first-year enrollment in 2002–2003.
- Combined first-year M.D. and D.O. enrollment at current schools is projected to reach 26,709 by 2016–2017, an increase of 37% 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. 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 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, 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 the monitoring process.

In 2002, there were 125 medical schools in the United States. As of late March 2012, the Liaison Committee on Medical Education (LCME) had granted full, provisional, or preliminary accreditation status to 12 new medical schools, bringing the total number of U.S. medical schools to 137.² In addition, as of late



1 AAMC Statement on the Physician Workforce (2006), https://www.aamc.org/download/137022/data/aamc_workforce_position.pdf. Accessed March 23, 2012.
 2 Liaison Committee on Medical Education, Directory of Developing Medical Education Programs, <http://www.lcme.org/newschoolprocess.htm>. Accessed March 26, 2012.

March 2012, the LCME had designated seven new schools as having applicant- or candidate-school status. Although they cannot yet enroll students, some of these schools hope to receive preliminary accreditation in time to enroll students before 2013. Media reports suggest other schools are under discussion that may or may not enter the LCME accreditation pipeline.^{3,4,5,6,7} For purposes of this report, we have included enrollment projections only for the 137 schools that have received full, provisional, or preliminary accreditation and the seven schools with LCME applicant- or candidate-school status (see **Appendix** and **Figure 1**).

Survey Methodology

The AAMC Center for Workforce Studies administered the eighth annual survey of medical school enrollment plans to the deans of the 134 U.S. medical schools that were LCME-accredited or preliminarily accredited in early fall 2011. An e-mail introduction to the survey was sent, which included a link to the Web-based survey. Follow-up reminder e-mails were sent to deans who did not initially respond. Of the schools surveyed, 129 (or 95 percent) responded; 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 2016–2017 academic year. For schools that did not respond in 2011, enrollment numbers from the 2010 survey were used. The enrollment information provided by the respondents was self-reported, though current-year enrollment was validated with AAMC records.⁸ Additionally, schools were queried about clerkship opportunities, expansion plans, and their efforts at targeting enrollment increases to specific population groups.

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

Data were also obtained from the American Association of Osteopathic Colleges of Medicine (AACOM) on enrollment plans at osteopathic schools. The AACOM administered a similar survey to 26 osteopathic colleges and their branch campuses in winter 2012 with a 100 percent response rate.

-
- 3 Thanh Tan, "Fighting for Austin Med School," *Texas Tribune*, Feb. 10, 2012, http://www.nytimes.com/2012/02/10/us/austin-and-rio-grande-valley-both-want-texas-next-four-year-medical-school.html?_r=3&ref=us.
 - 4 Ashley Jackson, "Start a Medical School in Martinsville?" *Martinsville Bulletin*, Jan. 29, 2012, <http://www.martinsvillebulletin.com/article.cfm?ID=31877>.
 - 5 Alex Bridges, "Shenandoah University to Study Medical School Feasibility," *NV Daily*, Dec. 23, 2011, <http://www.nvdaily.com/news/2011/12/shenandoah-university-to-study-medical-school-feasibility.php>.
 - 6 Michael Booth, "DU Weighing Medical School," *The Denver Post*, Dec. 6, 2011, http://www.denverpost.com/news/ci_19477872.
 - 7 Stephanie Innes, "Mayo Clinic to Open Arizona's Second School for MDs," *Arizona Daily Star*, Sept. 28, 2011, http://azstarnet.com/news/science/health-med-fit/article_796e2bd9-a060-51ca-a33e-7dfb833a95f4.html.
 - 8 AAMC FACTS, Table 4: Matriculants to U.S. Medical Schools by State of Legal Residence, 2000-2011, <https://www.aamc.org/download/159534/data/table4.pdf>. Accessed March 26, 2012.

Current Enrollment and Trends in the Next Five Years

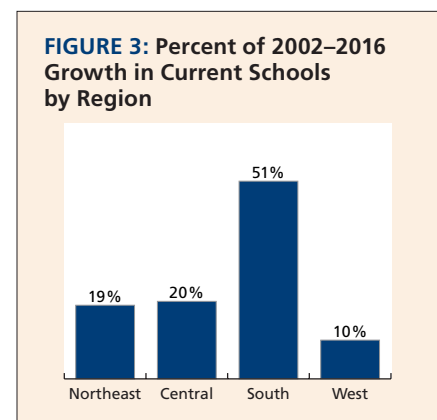
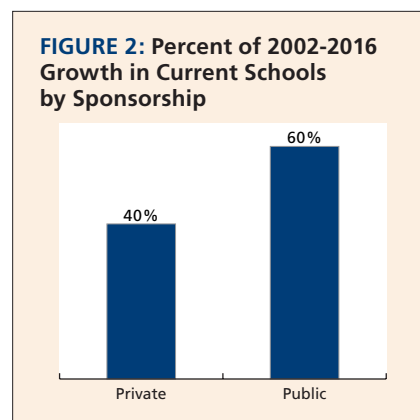
Medical school enrollment has increased by 16.6 percent over the 2002 level as of the 2011–2012 academic year and is projected to increase by 29.6 percent by 2016–2017. More than half of the projected growth by 2016 (56.1 percent) has already taken place, largely due to increases at the 125 schools that were LCME-accredited as of 2002. Their enrollment plans account for 58.3 percent of the projected increase in first-year enrollment between 2002 and 2016. Of the 12 schools that have been accredited since 2002, 9 were already enrolling students as of 2011, and by 2016 the 12 schools expect to enroll 1,192 students. The growth at these new schools since 2002 accounts for 24.4 percent of the overall 2002–2016 growth. Additionally, current LCME applicant and candidate schools are projecting an enrollment of 846 students by 2016, and this represents the balance (17.3 percent) of growth in first-year enrollment between 2002–2016 (**Table 1**).

TABLE 1: Summary of Baseline and Current First-Year Enrollment, and Projected First-Year Enrollment through 2016

	Base	Current	Projected				
	2002	2011	2012	2013	2014	2015	2016
A. Schools accredited as of 2002 (125)	16,488	18,663	18,773	18,975	19,084	19,262	19,338
# increase from 2002		2,175	2,285	2,487	2,596	2,774	2,850
% increase from 2002		13.2%	13.9%	15.1%	15.7%	16.8%	17.3%
B. Accredited schools since 2002 (12)		567	865	1,002	1,121	1,182	1,192
C. Currently accredited schools (137) (A + B)	16,488	19,230	19,638	19,977	20,205	20,444	20,530
# increase from 2002		2,742	3,150	3,489	3,717	3,956	4,042
% increase from 2002		16.6%	19.1%	21.2%	22.5%	24.0%	24.5%
D. Applicant and Candidate Schools (7)		0	0	350	515	682	846
E. Total (144) (C + D)	16,488	19,230	19,638	20,327	20,720	21,126	21,376
# increase from 2002		2,742	3,150	3,839	4,232	4,638	4,888
% increase from 2002		16.6%	19.1%	23.3%	25.7%	28.1%	29.6%

Distribution of Growth from the Existing 137 Medical Schools

Of the 4,042 projected new positions by 2016 from the current 137 medical schools, the majority (60.2 percent) are expected to come from public schools (**Figure 2**). Regionally, the greatest growth in enrollment will take place in the South and the schools in that region will collectively account for half (50.5 percent) of the projected increase in enrollment between 2002 and 2016 (**Figure 3**). Schools with plans to increase enrollment between now and 2016 intend to use a variety of options to accommodate the planned increase in class size, such as expansion of current clinical affiliations (39.5 percent); new clinical affiliations (38.8 percent); expansion of existing campuses, including branch campuses (27.9 percent); and new regional or branch campuses (17.1 percent).



Projections Beyond 2016

To project enrollment beyond 2016, 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 (2015–2016 to 2016–2017), 0.39 percent, was projected forward for each year beyond 2016. For the 12 new schools since 2002, we compared survey data with each school's Web site and other sources to determine if these schools were likely to further increase enrollment beyond 2016. Data for these schools indicated they will have reached their planned enrollment targets by 2016, so no growth was assumed beyond 2016. Finally for the 7 applicant and candidate schools, we obtained data from the schools on their estimated enrollment growth between 2016 and 2020 and divided that total anticipated increase in enrollment evenly over the four-year period. The resulting projections are displayed in **Figures 4–7**.

The current 137 schools plus the 7 applicant and candidate schools are on track to reach 30 percent increase in enrollment by 2016 (increasing enrollment by 29.6 percent over the 2002 level). Without the 7 applicant and candidate schools in the pipeline, enrollment growth is not expected to reach the 30 percent target until beyond 2020.

FIGURE 4: Historical and Projected First-Year Enrollment for Original 125 Schools as of 2002

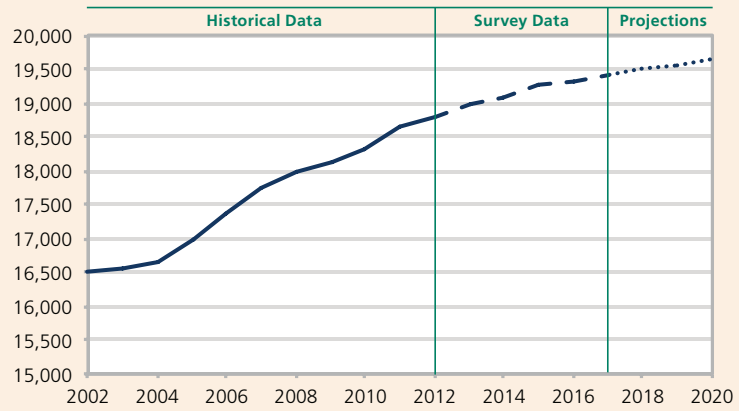


FIGURE 5: Historical and Projected First-Year Enrollment for New Schools Since 2002 (12)

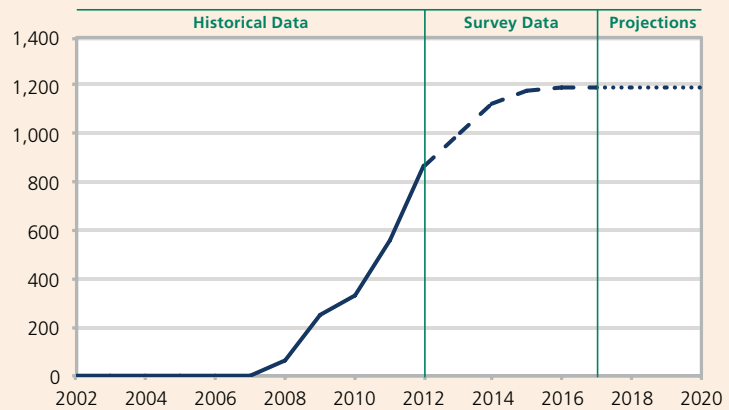


FIGURE 6: Historical and Projected First-Year Enrollment for Applicant and Candidate Schools (7)

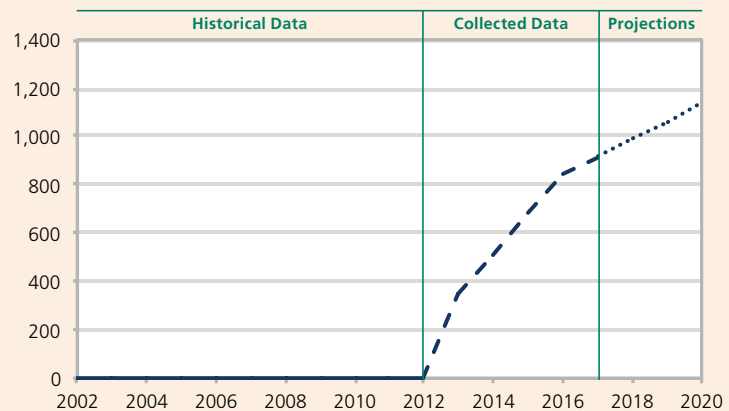
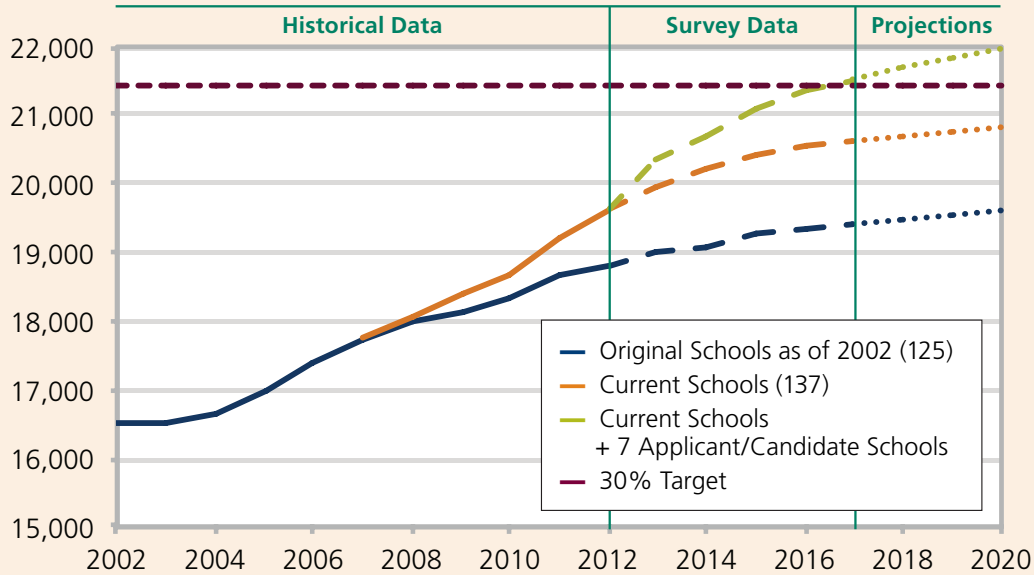


FIGURE 7: Projected First-Year Enrollment Growth through 2020



Clinical Training Opportunities for Students

The 2011 enrollment survey included a question regarding concerns about student clinical training opportunities; results are compared with 2010 enrollment survey data (**Table 2**). Due to small cell sizes for some categories, the responses “Very Concerned” and “Moderately Concerned” were combined into one category: “Concerned.” In 2011, 65 percent of respondents reported being concerned regarding the adequacy of clinical training opportunities for students. This rate represents a decrease from 72 percent in 2010. In 2011, 74 percent of deans had expressed concern regarding the supply of qualified primary care preceptors and 53 percent had concerns regarding the supply of qualified specialty preceptors. In 2010, 35 percent of medical school deans had reported being concerned with the volume or diversity of patients in the clinical opportunities for their students. This rate increased slightly to 36 percent in 2011.

TABLE 2: Concern Regarding Clinical Training Opportunities, 2010 and 2011

Given current and planned enrollment, what is the level of concern regarding adequacy of clinical opportunities for students, including:

	2010 (125 schools)		2011 (129 schools)	
	#	%	#	%
Number of clinical training sites				
Concerned	90	72%	84	65%
Not Concerned	35	28%	45	35%
Supply of qualified primary care preceptors				
Concerned	97	78%	96	74%
Not Concerned	28	22%	33	26%
Supply of qualified specialty preceptors				
Concerned	67	54%	68	53%
Not Concerned	58	46%	61	47%
Volume or diversity of patients				
Concerned	44	35%	47	36%
Not Concerned	81	65%	82	64%

Note: Differences across the years were not statistically significant.

Economic Environment

In 2009, economic conditions led us to add the following question to the survey: “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.” In 2011 as in 2010, 52 percent of respondents reported being concerned about the impact of the economic environment on enrollment. By contrast, in 2009 only 39 percent of respondents reported being concerned (**Table 3**). A greater proportion of public (58 percent) as compared to private (43 percent) institutions in 2011 reported concern about the impact of the economic environment, although the difference was not statistically significant.

TABLE 3: Concern that Economic Recession/Environment Will Limit Ability to Keep Current Enrollment or Increase Enrollment, 2009-2011

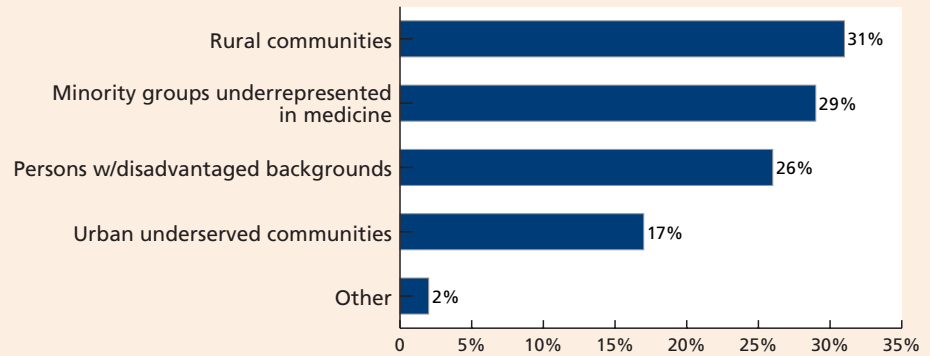
	2009		2010		2011	
	#	%	#	%	#	%
Concerned	46	39%	66	52%	67	52%
Not concerned	71	61%	60	48%	61	48%
Total	117	100%	126	100%	128	100%

Note: Differences across the years were not statistically significant.

Targeted Increases in Enrollment

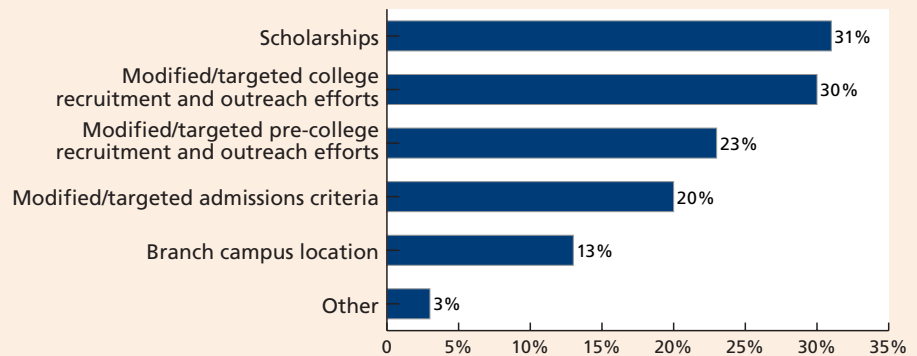
The enrollment survey this year included the following question: “Has any recent increase or planned increase in enrollment been targeted to specific population groups or to better meeting the needs of underserved communities?” Two subsequent questions asked what groups and/or communities were targeted and the method by which those groups were targeted. Of schools responding, 42.7 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 (46.9 percent) than private schools (28.3 percent) indicated “Yes” to this question. **Figures 8 and 9** show the percentage of responding schools that reported targeting each group and the method used. Note the percentages represent percentage of all schools, not just those who indicated they had targeted increases in enrollment. Respondents could select more than one group.

FIGURE 8: Percent of Schools Targeting Enrollment Increases to Specific Groups and/or Communities



Note: Schools could select more than one option.

FIGURE 9: Percent of Schools Using the Following Approaches for Targeting Enrollment Increases to Specific Populations or Communities



Note: Schools could select more than one option.

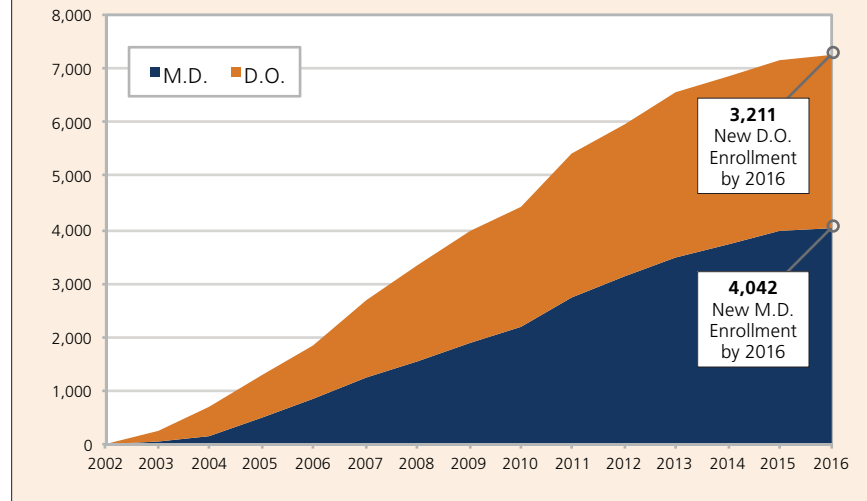
M.D. and D.O. Combined Projections for Current Schools

The American Association of Colleges of Osteopathic Medicine (AACOM) uses a survey similar to the AAMC’s to collect its future enrollment figures. The 2011 new first-year enrollment at osteopathic schools of 5,627 represents an increase of 89.6 percent over enrollment in 2002. By 2016, AACOM expects total new first-year enrollment to increase to 6,179, representing a doubling (108 percent) over 2002 enrollment. By 2016, medical and osteopathic schools will have a combined increase of 37.3 percent, enrolling an additional 7,253 students in their first-year classes compared to 2002 (**Table 4; Figure 10**). Of that growth, 44.3 percent will come from osteopathic schools.

TABLE 4: M.D. and D.O. First-Year Enrollment Growth for Current Schools

	2002	2011		2016			
	Enrollment	Enrollment	# Increase	% Increase	Enrollment	# Increase	% Increase
M.D.	16,488	19,230	2,742	17%	20,530	4,042	25%
D.O.	2,968	5,627	2,659	90%	6,179	3,211	108%
Total	19,456	24,857	5,401	28%	26,709	7,253	37%

FIGURE 10: M.D. and D.O. Growth Since 2002 for Current Schools



Discussion

U.S. medical schools are on track to meet the call for a 30 percent increase in enrollment. However, it is important to note that in addition to growth at current schools, the enrollment projections depend on additional enrollment at the seven schools currently in applicant and candidate status with the LCME. While the existing schools are contributing the majority of enrollment growth, the schools currently in the pipeline are needed to reach the target.

Osteopathic schools are growing rapidly, and by 2016, the combined increase in M.D. and D.O. first-year enrollment (7,253) for current schools will be roughly equal to the number of international medical graduates (IMGs) who enter residency training programs in the United States each year.⁹ If the number of entry level residency positions does not continue to increase, we may face a day when some qualified graduates of U.S. medical schools and osteopathic schools will be unable to find residency positions.

Many schools are using enrollment increases as an opportunity to increase the diversity of their student body and address other societal needs by modifying curriculum and in some instances admissions criteria. In its Fall 2012 term, in *Fisher v. Texas*, the U.S. Supreme Court will consider a challenge to the University of Texas at Austin's consideration of race in undergraduate admissions. The AAMC plans to submit a friend-of-the-court brief reinforcing with the Court the importance of deferring to the judgments of medical schools and other educational institutions in preparing a health care workforce that is best able to reduce health disparities and ensure quality healthcare for all.

An examination of our 2007 enrollment projections reveals that we were remarkably close to predicting 2011 enrollment—underestimating by only 66 students. While our aggregate counts were very close, enrollment at the original 125 schools was lower than expected (possibly as a result of the weak economy), and we underestimated growth of the new schools. In 2007, we projected that 5 new medical schools would be operational by 2011 rather than the 12 new schools that are now in existence. Overall, the closeness of our aggregate projections to actual enrollment is encouraging and indicates that estimates made today will be a good barometer of future enrollment trends.

Ongoing tracking of national medical school enrollment growth in future years will be critical. And any impact of contextual factors such as the role of health care reform, growth in other health professions such as nurse practitioners and physician assistants, and the economic environment will need to be monitored as well. This is especially true for public schools reliant on state funds that are in limited supply, given that 60.2 percent of the projected enrollment growth by 2016 for the currently accredited medical schools is from public schools. Medical school enrollment trends are an early indicator of future physician workforce dynamics and thus play a vital role in informing policy decisions.

9 C. Erikson, P. Jolly, G. Garrison, "Key Indicators in Academic Medicine: Number of Program Year 1 Residents in Accredited Residency Programs," *Academic Medicine* 87 (2012): 238-239.

Appendix

Medical Schools in the LCME Accreditation Process (as of Late March 2012)

Schools With Provisional Accreditation

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

Schools With Preliminary Accreditation

- Central Michigan University College of Medicine (Mich.)
- Charles E. Schmidt College of Medicine at Florida Atlantic University (Fla.)
- The Commonwealth Medical College (Pa.)
- Cooper Medical School of Rowan University (N.J.)
- Hofstra University School of Medicine (N.Y.)
- Oakland University William Beaumont School of Medicine (Mich.)
- University of South Carolina School of Medicine, Greenville (S.C.)
- Virginia Tech Carilion School of Medicine (Va.)

LCME-Candidate Schools

- University of Arizona College of Medicine, Phoenix (Ariz.)

LCME-Applicant Schools

- California Northstate University College of Medicine (Calif.)
- King School of Medicine and Health Science Center (Va.)
- Quinnipiac University School of Medicine (Conn.)
- Palm Beach Medical College (Fla.)
- University of California, Riverside (Calif.)
- Western Michigan University (Mich.)

References

AAMC FACTS, Table 4: Matriculants to U.S. Medical Schools by State of Legal Residence, 2000-2011, <https://www.aamc.org/download/159534/data/table4.pdf>. Accessed March 26, 2012.

AAMC Statement on the Physician Workforce (2006), https://www.aamc.org/download/137022/data/aamc_workforce_position.pdf. Accessed March 23, 2012.

Booth, Michael, "DU Weighing Medical School, The Denver Post, Dec. 6, 2011, http://www.denverpost.com/news/ci_19477872.

Bridges, Alex, "Shenandoah University to Study Medical School Feasibility, NV Daily, Dec. 23, 2011, <http://www.nvdaily.com/news/2011/12/shenandoah-university-to-study-medical-school-feasibility.php>.

Erikson C., Jolly P., Garrison G., "Key Indicators in Academic Medicine: Number of Program Year 1 Residents in Accredited Residency Programs," *Academic Medicine* 87 (2012): 238-239.

Innes, Stephanie, "Mayo Clinic to Open Arizona's Second School for MDs," *Arizona Daily Star*, Sept. 28, 2011, http://azstarnet.com/news/science/health-med-fit/article_796e2bd9-a060-51ca-a33e-7dfb833a95f4.html.

Jackson, Ashley, "Start a Medical School in Martinsville?" *Martinsville Bulletin*, Jan. 29, 2012, <http://www.martinsvillebulletin.com/article.cfm?ID=31877>.

Liaison Committee on Medical Education, *Directory of Developing Medical Education Programs*, <http://www.lcme.org/newschoolprocess.htm>. Accessed March 26, 2012.

Tan, Thanh, "Fighting for Austin Med School," *Texas Tribune*, Feb. 10, 2012, http://www.nytimes.com/2012/02/10/us/austin-and-rio-grande-valley-both-want-texas-next-four-year-medical-school.html?_r=3&ref=us.



**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