



Tomorrow's Doctors, Tomorrow's Cures®

Results of the 2014 Medical School Enrollment Survey

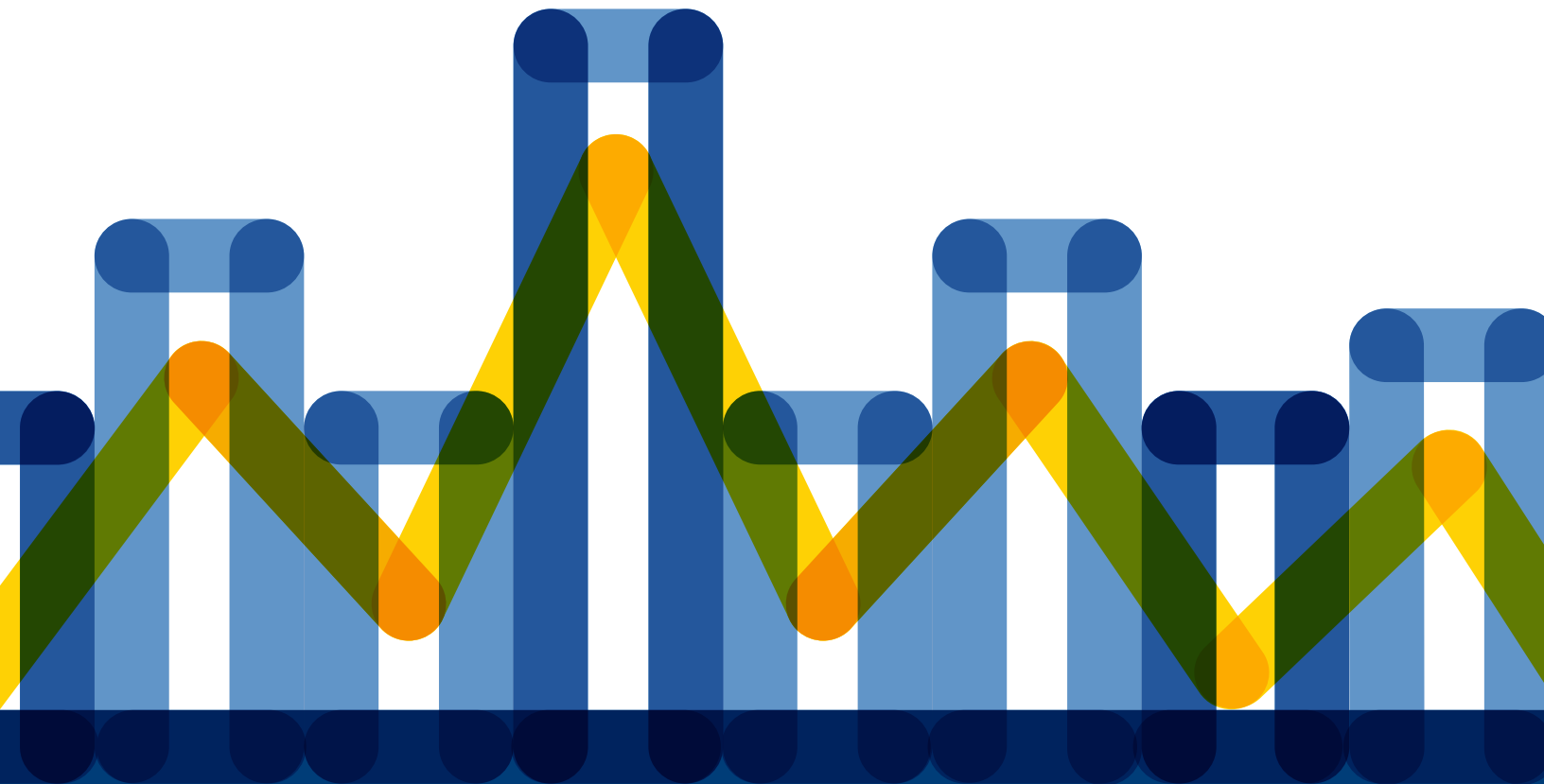
Center for Workforce Studies

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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 projects first-year medical school enrollment through 2025 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 11th annual AAMC Survey of Medical School Enrollment Plans. Each fall, the survey is sent to deans at all M.D.-granting U.S. medical schools with preliminary accreditation or higher. This most recent survey was conducted between September 2014 and January 2015.

Key findings include:

- **The proposed 30 percent first-year enrollment increase will soon be attained.**

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 suggest that first-year medical school enrollment in 2019–2020 will reach 21,304—a 29.2 percent increase over the 2002–2003 level and only 130 positions shy of the 30 percent target. If medical schools realize current 2019 enrollment projections, then two-thirds of the growth from 2002 enrollment would be achieved by the 125 medical schools that were accredited as of the 2002 baseline year. Newly accredited schools since 2002 would provide the remaining one-third of the growth. Enrollment growth could be accelerated if any of the nine applicant schools in the LCME pipeline attain preliminary accreditation.

- **The supply of clinical training opportunities is a growing concern.**

The number of schools reporting concerns regarding their number of clinical training sites increased by 26 percent from 2010 to 2014. In 2014, 87 percent of respondents expressed concern about both the number of clinical training sites and the supply of qualified primary care preceptors. Sixty-seven percent expressed concern 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-one percent of schools reported this as a major or moderate concern in their state and 86 percent expressed similar concern at the national level. Slightly less than half (48 percent) reported major or moderate concern about their own incoming students' ability to find residency positions of their choice after medical school.

- **Many schools are continuing to develop and implement initiatives to increase student interest in careers in primary care.**

The percent of medical schools that said they either had or were planning at least one initiative to increase student interest in primary care specialties rose from 49 percent in 2009 to 75 percent in 2010, and has remained above 70 percent in subsequent surveys.

- **Enrollment increases at D.O.-granting schools continue to accelerate.**

First-year enrollment at D.O.-granting schools in 2019–2020 is expected to reach 7,780, a 162 percent increase from 2002–2003. Combined first-year enrollment at existing M.D.-granting and D.O.-granting medical schools is projected to reach 29,084 by 2019–2020, an increase of 49 percent compared with 2002–2003.

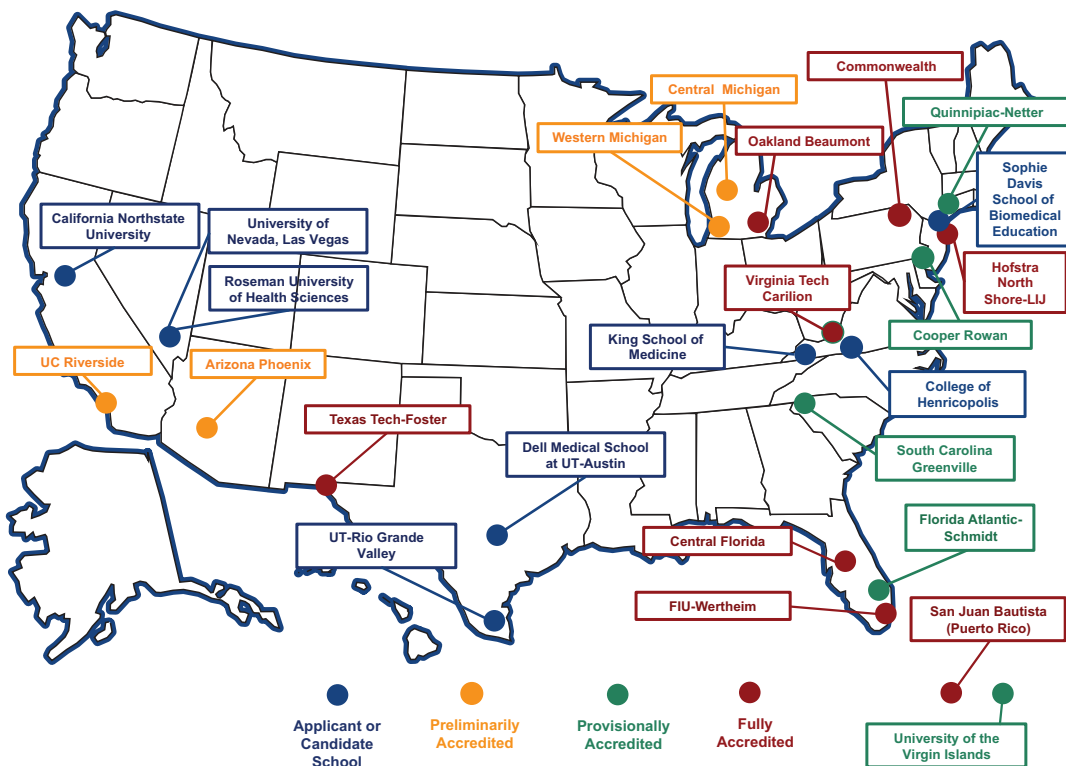
Background

In 2006, in response to concerns of a 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 meeting this goal 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 that monitoring process.

In 2002, there were 125 accredited M.D.-granting medical schools in the United States. As of March 2015, 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. M.D.-granting medical schools operating during the 2014–2015 academic year.² Additionally, the American Osteopathic

Figure 1: New M.D.-Granting Medical Schools Accredited Since 2002 or in the LCME Accreditation Process (as of March 2015)



1 Association of American Medical Colleges. Statement on the Physician Workforce. June 2006. <https://www.aamc.org/download/55458/data/workforceposition.pdf>. Accessed Feb. 2, 2015.

2 Liaison Committee on Medical Education. Medical School Directory. 2015. <http://www.lcme.org/directory.htm>. Accessed March 4, 2015.

Association's Commission on Osteopathic College Accreditation (COCA) lists 30 D.O.-granting medical schools operating in 40 sites during the 2014–2015 academic year.³ The LCME lists an additional nine schools as having applicant or candidate status (see **Figure 1**) and the COCA lists an additional 13 schools as having applicant status.⁴ Although these 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 2025. Media reports suggest other schools are under consideration and may or may not enter the LCME or COCA accreditation systems.^{5,6,7} For purposes of this report, we included enrollment projections for only the 141 M.D.-granting schools and 30 D.O.-granting schools that have received full, provisional, or preliminary accreditation as of March 2015.

Survey Methodology

The AAMC Center for Workforce Studies administered the 11th annual Survey of Medical School Enrollment Plans in September 2014 to the deans of 141 U.S. medical schools that were fully, provisionally, or preliminarily LCME-accredited. An email introduction included a link to the Web-based survey. Deans who did not initially respond received follow-up emails. Of the schools surveyed, 130 responded (92 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 2019–2020 academic year. For the 11 schools that did not provide enrollment plans on the 2014 survey, reported plans from the 2013 survey were used where available. For the two schools that did not provide enrollment plans in 2013 or 2014, enrollment for the 2014 academic year was substituted for each projected year. Historic enrollment data in this report are from the AAMC Student Records System.

The survey also asked schools to report their concerns about clerkship opportunities and graduate medical education (GME), and their efforts to increase student interest in primary care specialties. We present trends over time using available data from previous surveys.

Data also were obtained from the American Association of Colleges of Osteopathic Medicine (AACOM) on enrollment plans at D.O.-granting schools and are included in **Table 3** and **Figure 9**. Data are based on the annual AACOM Survey of College of Osteopathic Medicine Deans administered in September 2014.

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- 3 Commission on Osteopathic College Accreditation. Colleges of Osteopathic Medicine. December 1, 2014. <http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/documents/current-list-of-colleges-of-osteopathic-medicine.pdf>. Accessed February 24, 2015.
 - 4 Commission on Osteopathic College Accreditation. New and Developing COMs and Campuses. June 17, 2014. <http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/documents/new-and-developing-colleges-of-osteopathic-medicine-and-campuses.pdf>. Accessed February 24, 2015.
 - 5 Kalmanson, Dan. Hackensack University Health Network and Seton Hall University Announce Joint Venture to Form School of Medicine. January 15, 2015. <http://www.shu.edu/news/article/499787#.VOyUbyS9p9>. Accessed February 24, 2015.
 - 6 Cohen, Jodi S. U. of I. pitches new medical school. *Chicago Tribune*. September 30, 2014. <http://www.chicagotribune.com/news/local/ct-u-of-i-medical-school-20140930-story.html#page=1>. Accessed February 24, 2015.
 - 7 Artz, Kenneth. New Medical School Approved in Washington State. The Heartland Institute. December 9, 2014. <http://news.heartland.org/newspaper-article/2014/12/09/new-medical-school-approved-washington-state>. Accessed February 24, 2015.

Results

Current Enrollment and Projected Trends in the Next Five Years

Medical school first-year enrollment has increased by more than 23 percent from the 2002 baseline level as of the 2014–2015 academic year and is projected to increase by 29 percent by 2019–2020. Of the 125 schools that were accredited in 2002, 31 (25 percent) plan to grow from 2015 to 2019. By comparison, six of the 16 schools accredited since 2002 (38 percent) plan to grow during that period.

If schools meet projected enrollment targets for 2019, then increases at the 125 schools that were LCME-accredited in 2002 would account for 66 percent of the projected growth in first-year enrollment between 2002 and 2019. The growth at new schools since 2002 would account for the remaining 34 percent of the overall 2002–2019 growth (**Table 1**).

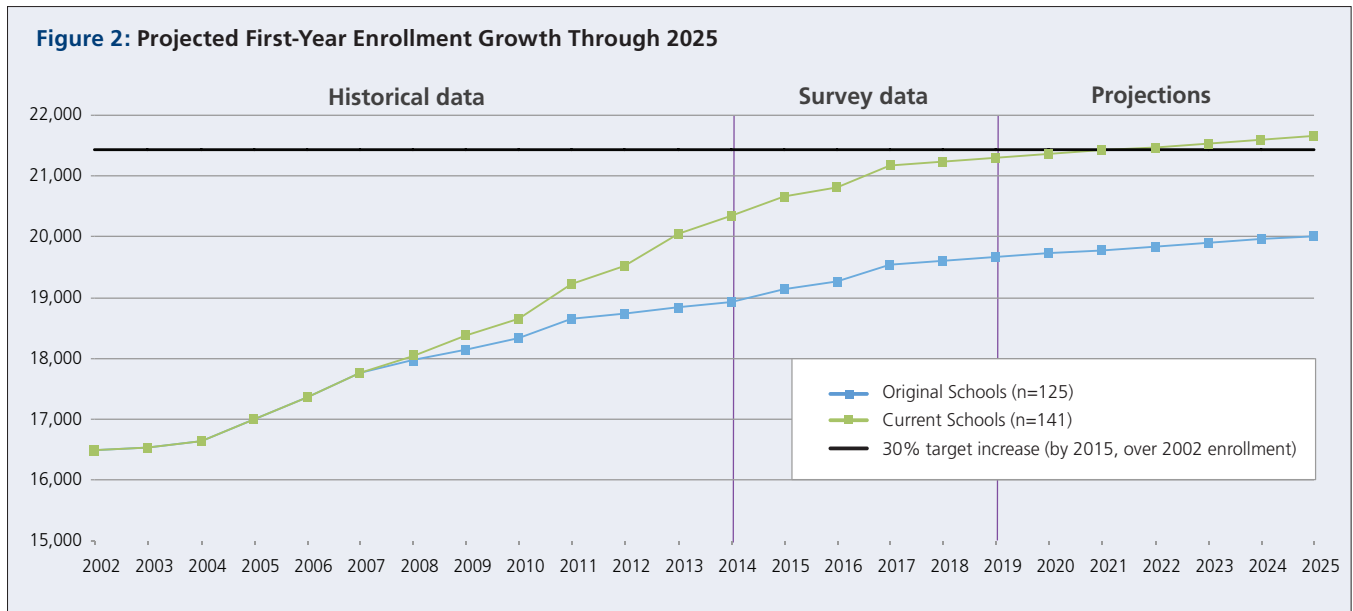
Table 1: Summary of Baseline and Current First-Year Enrollment, and Projected First-Year Enrollment Through 2019

		Base	Current	Projected				
		2002	2014	2015	2016	2017	2018	2019
A.	Schools accredited as of 2002 (n=125)	16,488	18,924	19,139	19,265	19,554	19,609	19,667
	# increase from 2002		2,436	2,651	2,777	3,066	3,121	3,179
	% increase from 2002		14.8%	16.1%	16.8%	18.6%	18.9%	19.3%
B.	Schools accredited after 2002 (n=16)		1,419	1,519	1,542	1,619	1,637	1,637
C.	Total (n=141) (A + B)	16,488	20,343	20,658	20,807	21,173	21,246	21,304
	# increase from 2002		3,855	4,170	4,319	4,685	4,758	4,816
	% increase from 2002		23.4%	25.3%	26.2%	28.4%	28.9%	29.2%

Projections Beyond 2019

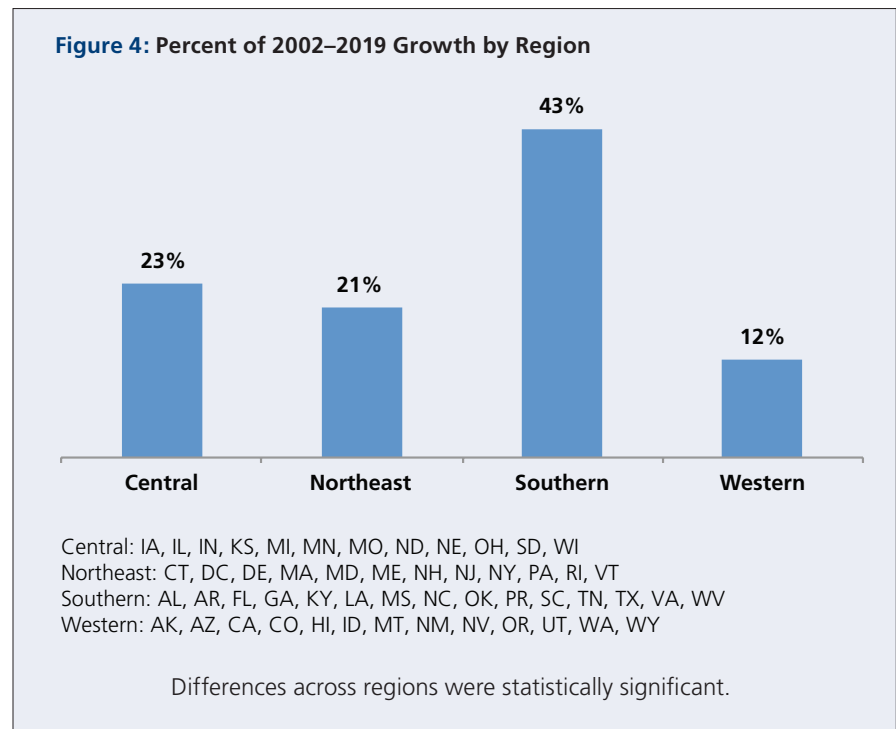
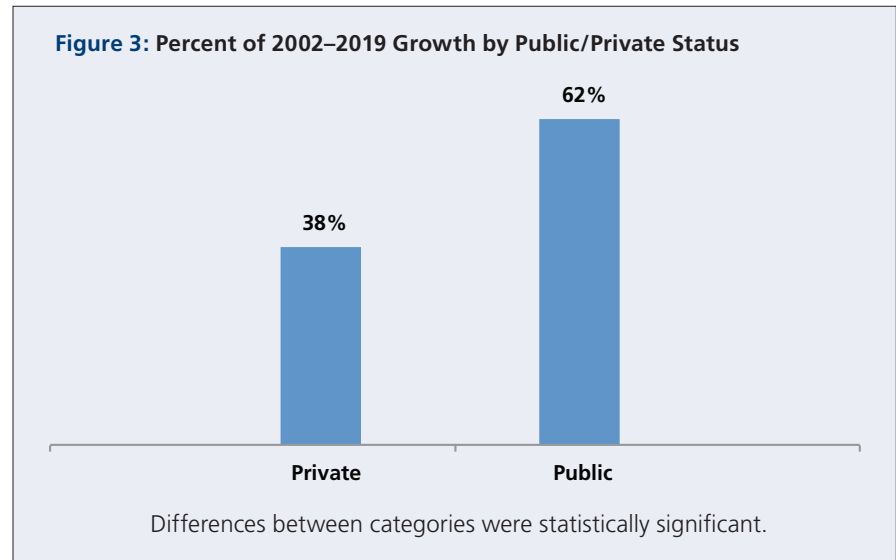
To project enrollment beyond 2019, the last year for which we requested enrollment data on the survey, a separate growth rate was employed for each category of school. For the 125 schools accredited as of 2002, the rate of growth between the last two years of survey data (2018 to 2019), 0.30 percent, was projected forward for each year beyond 2019. Ten of the 125 schools (8 percent) projected that they would grow from 2018 to 2019, whereas the remaining 92 percent of schools projected no growth during that period. For the 16 new schools since 2002, we examined enrollment targets on the school’s website or in media accounts about the new school where available. Since all nine schools that provided online information expected to reach their target enrollment by 2019 and the remaining schools’ reported enrollment plans indicated no growth beyond 2017, no further growth was projected beyond 2019 for the 16 new schools since 2002.

Cumulatively, the current 141 schools are projected to nearly reach the targeted 30 percent increase in enrollment by 2019 (over the 2002 level), and are projected to surpass the targeted enrollment by 2022.



Enrollment Growth by Sponsorship and Region

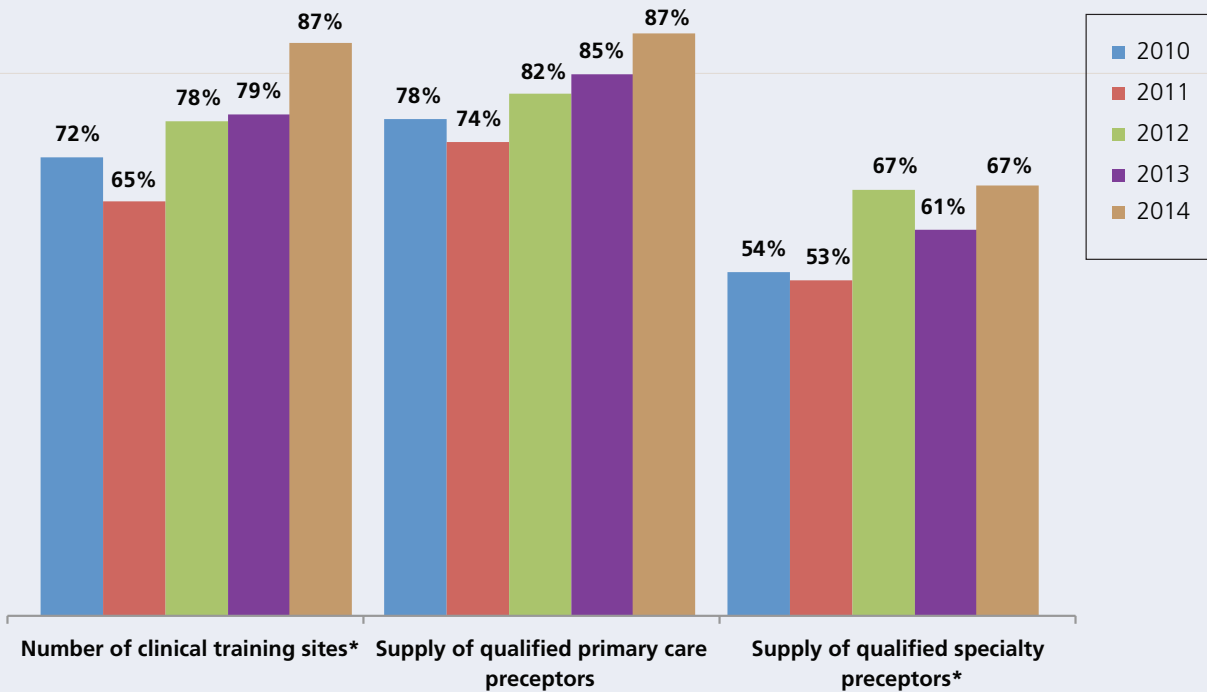
The majority (62 percent) of the projected growth in enrollment between 2002 and 2019 is expected to occur at public schools (**Figure 3**). Nationally, schools in the Southern region will account for the largest portion (43 percent) of the projected increase in enrollment between 2002 and 2019 (**Figure 4**).



Clinical Training Opportunities for Students

The survey asked schools to report their concerns about the number of clinical training sites and the supply of both primary care and specialty preceptors (**Figure 5**). Responses were collapsed into two categories: “concerned” and “not concerned.” Concern has increased steadily over time, with the number of schools expressing concern about the number of clinical training sites increasing by 26 percent from 2010 to 2014 (72 percent to 87 percent). Nearly nine out of 10 schools in 2014 were also concerned about the supply of qualified primary care preceptors. Sixty-seven percent had concerns about the supply of qualified specialty preceptors.

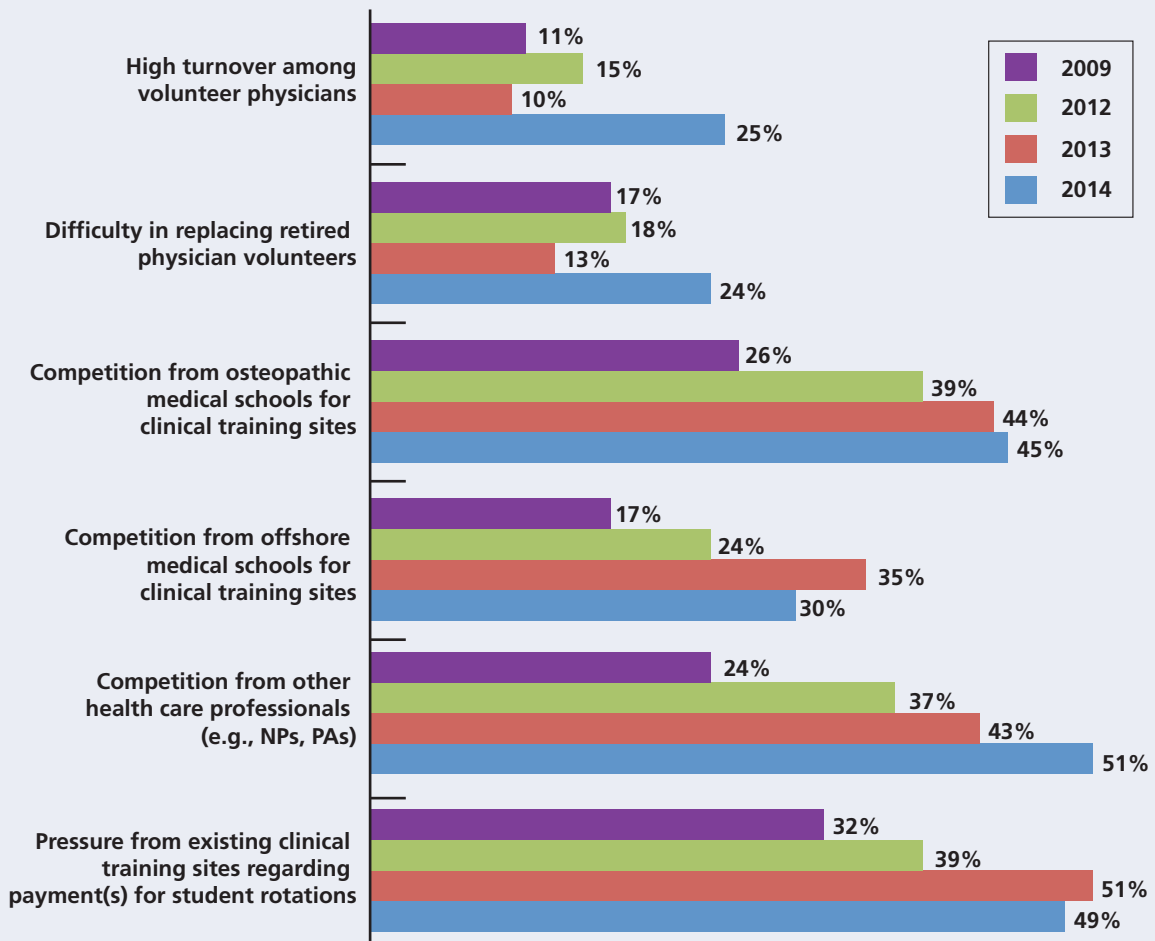
Figure 5: Percent of Schools Concerned About Clinical Training Opportunities, 2010–2014



Statistically significant (chi-square test)

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 (Figure 6). We compared 2014 responses with results from previous years in which this question was asked. Results show an increase in the number of schools experiencing high turnover among volunteer physicians. There was also growth in the number of schools reporting increased competition for sites and pressure from existing clinical training sites regarding payment(s) for student rotations.

Figure 6: Schools Experiencing Difficulties with Existing Clinical Training Sites, 2009–2014

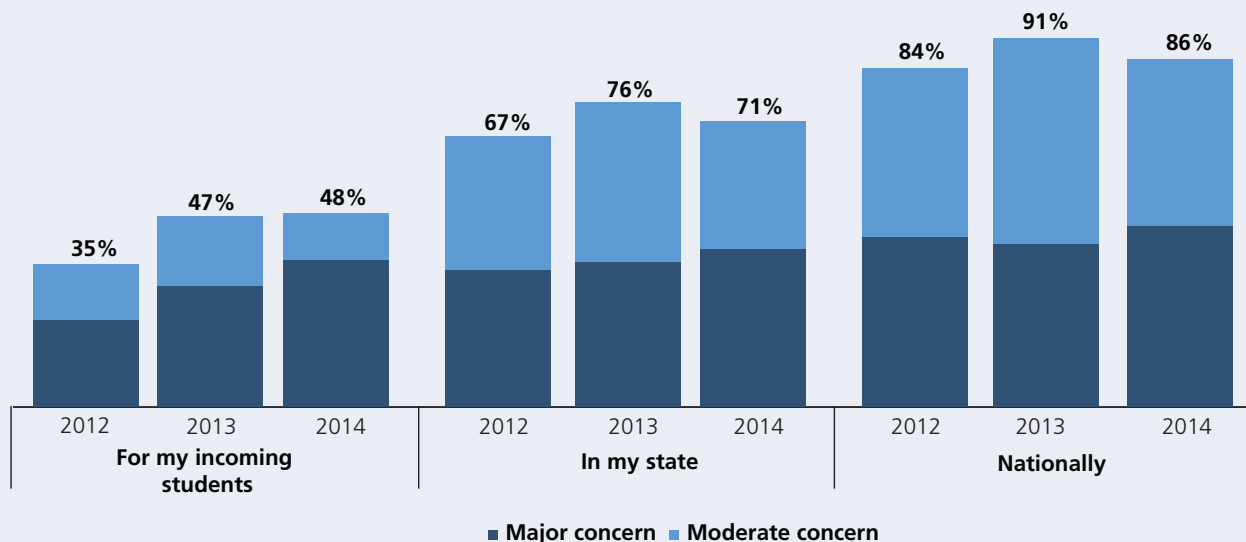


Graduate Medical Education Concerns

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 7**). Seventy-one percent of schools reported this being a “major” or “moderate” concern in their state compared with 86 percent at the national level. Slightly less than half (48 percent) reported “major” or “moderate” concern about their incoming students’ ability to find residency positions of their choice after medical school. Differences across the years were not statistically significant. The level of concern did not show any pattern by public/private status, region, or other school characteristics.

Figure 7: Percent of Schools Expressing Concern About Graduate Medical Education, 2012–2014



Note: Differences across the years were not statistically significant.

Primary Care Initiatives

The percentage of schools implementing programs or policies to encourage student interest in primary care specialties increased from 2009 to 2010 and has held steady through 2014 (**Figure 8**). A greater proportion of public schools (78 percent) than private schools (60 percent) responded “Yes” to this question in 2014.

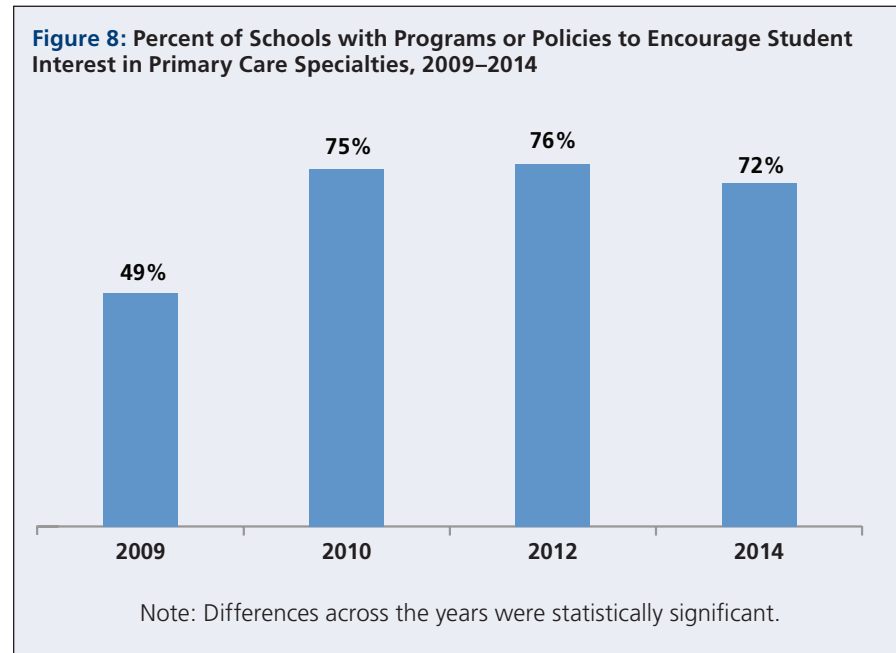


Table 2 shows the types of primary care initiatives reported in 2014. Note that the percentages in the table represent the percentage of all schools, not just those that indicated they had primary care initiatives. Respondents could select more than one item. This set of questions was also asked in 2010 and 2012, and the responses were similar.^{8,9}

Table 2: Initiatives to Encourage Student Interest in Primary Care Specialties, 2014

“Which of the following have you implemented or plan to implement within two years specifically to increase student interest in primary care specialties?”

	Established (≥ 2 years)	Recently implemented (< 2 years)	Planned (within next 2 years)
Refined admissions criteria	29%	5%	5%
Modified preclinical curriculum	22%	10%	8%
Modified clinical curriculum/clerkships	29%	13%	10%
New or expanded extracurricular opportunities	26%	14%	8%
Expanded primary care faculty and/or resources	19%	12%	13%
Additional primary care faculty training and development	15%	9%	15%
Financial incentives (e.g., tuition reduction or debt reduction)	14%	8%	15%

⁸ Association of American Medical Colleges. Results of the 2010 Medical School Enrollment Survey. June 2011. <https://www.aamc.org/download/251636/data/enrollment2011.pdf>

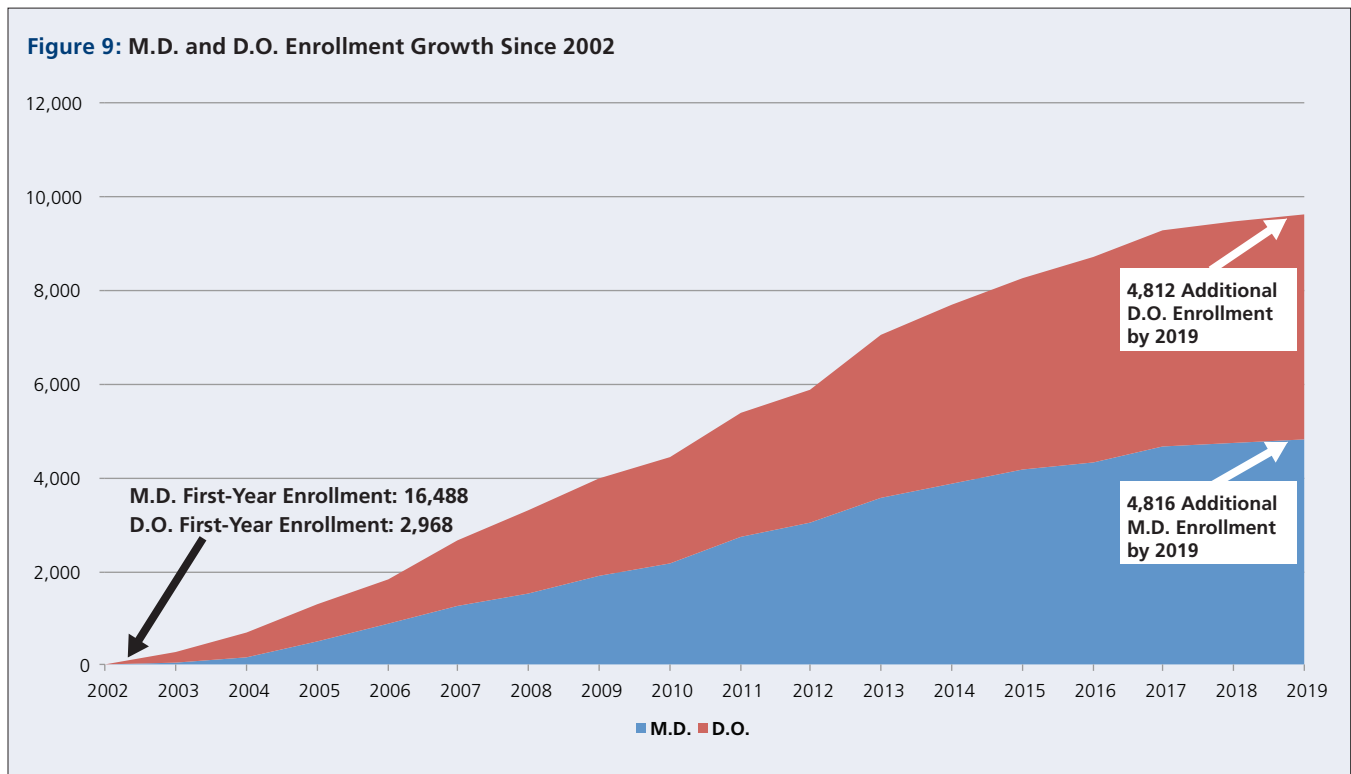
⁹ Association of American Medical Colleges. Results of the 2012 Medical School Enrollment Survey. May 2013. <https://members.aamc.org/eweb/upload/12-237%20EnrollmSurvey2013.pdf>

Combined M.D. and D.O. Projections

The AACOM uses survey and accreditation data to project its future enrollment. The 2014 new first-year enrollment of 6,786 at D.O.-granting schools represents a 129 percent increase over enrollment in 2002. AACOM estimates total new first-year enrollment will reach 7,780 by 2019, which represents a 162 percent increase over 2002 first-year enrollment. By 2019, medical and D.O.-granting schools would have a combined increase of 49 percent, enrolling an additional 29,084 students in their first-year classes compared with 2002 (Table 3, Figure 9). Half of that growth would come from D.O.-granting schools.

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

	2002 Base	2014 Current		2019 Projected			
	Enrollment	Enrollment	# Increase	% Increase	Enrollment	# Increase	% Increase
M.D.	16,488	20,343	3,855	23%	21,304	4,816	29%
D.O.	2,968	6,786	3,818	129%	7,780	4,812	162%
Total	19,456	27,129	7,673	39%	29,084	9,628	49%



Discussion

U.S. M.D.-granting medical schools remain on track for a 30 percent increase in enrollment, though at a slightly slower pace compared with previous reports. Last year, we projected that first-year enrollment at the 141 currently accredited M.D.-granting schools would nearly reach the 30 percent target by 2018, but enrollment projections for that year have since decreased by 103 students, making it likely that schools will not approach the 30 percent goal until 2019. Despite this slight decrease in projected enrollment, schools will be within 200 students of the 30 percent target in 2018 and the timeline could be accelerated if any of the nine applicant schools in the LCME pipeline attain 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.

The rate of growth at D.O.-granting schools continues to accelerate. Compared with last year's projected enrollment for 2018, this year's projected enrollment for 2018 increased by 720 students. By 2019, D.O.-granting schools are expected to enroll a total of 7,780 first-year students, which could be even higher if schools in the applicant stage become eligible to enroll students.

As student enrollment grows, school administrators are concerned about the number of clerkship sites and the supply of preceptors. As other health professions are also growing, clerkship opportunities are proving to be more competitive. More than half of survey respondents reported experiencing competition with other health disciplines, such as physician assistant and nurse practitioner programs, and nearly half of respondents felt pressured to pay for clinical training slots. These findings are consistent with previous findings from a joint report released in March 2014 by the AAMC, the American Association of Colleges of Nursing, the American Association of Colleges of Osteopathic Medicine, and the Physician Assistant Education Association.¹⁰

An increasing number of schools are encouraging student interest in primary care through targeted policies and programs, and 44 survey respondents (34 percent) reported that they plan to implement at least one primary care initiative by 2016. 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. Less than half of the 49 schools that planned to create at least one primary care initiative in 2012 reported on the 2014 survey that they had recently implemented a primary care initiative. Amid growing demand for primary care and projected shortages of as many as 31,100 primary care physicians by 2025, targeted programs to recruit students toward primary

¹⁰ Association of American Medical Colleges. Recruiting and Maintaining U.S. Clinical Training Sites: Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey. March 2014. https://members.aamc.org/eweb/DynamicPage.aspx?Action=Add&ObjectKeyFrom=1A83491A-9853-4C87-86A4-F7D95601C2E2&WebCode=PubDetailAdd&DONotSave=yes&ParentObject=CentralizedOrderEntry&ParentDataObject=Invoice%20Detail&ivd_formkey=69202792-63d7-4ba2-bf4e-a0da41270555&ivd_prc_prd_key=945C0444-0472-4540-AF0A-6C8165EF2C66. Accessed February 24, 2015.

care specialties will greatly assist medical schools in preparing the right mix of physicians to serve in the places of greatest need.¹¹

GME continues to be a concern for medical schools at the state and especially at the national level. 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.¹² In the current fiscal climate, the potential for cuts in federal funding for GME is of great concern to many in the medical education community.¹³ In response to these challenges, the AAMC, working with the nation's medical schools, teaching hospitals, and health systems, is undertaking a five-year plan to optimize GME in the United States. Some of the priorities of this initiative include aligning residency training positions with societal needs and student aspirations and desires, making the case to ensure public funding of GME, improving the environment for teaching faculty, and developing models to optimize the duration of education and training.¹⁴ Continued monitoring of medical school enrollment is crucial to support these initiatives.

11 IHS, Inc. The Complexities of Physician Supply and Demand: Projections from 2013 to 2025. March 2015. <https://www.aamc.org/download/426242/data/ihsreportdownload.pdf>. Accessed April 3, 2015.

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

13 Association of American Medical Colleges. Preserving Funding for Graduate Medical Education. <https://www.aamc.org/initiatives/gmefunding>. Accessed March 27, 2013.

14 Association of American Medical Colleges. Optimizing Graduate Medical Education. A Five-Year Road Map for America's Medical Schools, Teaching Hospitals, and Health Systems. 2015. <https://www.aamc.org/download/425468/data/optimizinggmereport.pdf>. Accessed March 3, 2015.

Appendix **New Schools Accredited Since 2002 or in the LCME Accreditation Process** (as of March 2015)^{15,16}

Fully Accredited Since 2002 (n=8)

- Florida International University Herbert Wertheim College of Medicine (Florida)
- San Juan Bautista School of Medicine (Puerto Rico)
- Paul L. Foster School of Medicine Texas Tech University Health Sciences Center (Texas)
- University of Central Florida College of Medicine (Florida)
- The Commonwealth Medical College (Pennsylvania)
- Virginia Tech Carilion School of Medicine (Virginia)
- Hofstra North Shore-LIJ School of Medicine at Hofstra University (New York)
- Oakland University William Beaumont School of Medicine (Michigan)

Schools with Provisional Accreditation (n=4)

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)
- Cooper Medical School of Rowan University (New Jersey)
- University of South Carolina School of Medicine, Greenville (South Carolina)
- Frank H. Netter MD School of Medicine at Quinnipiac University (Connecticut)

Schools with Preliminary Accreditation (n=4)

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

- Central Michigan University College of Medicine (Michigan)
- University of Arizona College of Medicine – Phoenix (Arizona)
- University of California – Riverside School of Medicine (California)
- Western Michigan University Homer Stryker M.D. School of Medicine (Michigan)

Schools with Candidate Status (n=5)

Candidate 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)
- Sophie Davis School of Biomedical Education (New York)
- University of Texas Rio Grande Valley School of Medicine (Texas)
- University of the Virgin Islands School of Medicine (Virgin Islands)

Schools with Applicant Status (n=4)

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

- 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)
- University of Nevada, Las Vegas, School of Medicine (Nevada)

15 View the Glossary of LCME Accreditation Terminology for full definitions of each accreditation status. <http://www.lcme.org/survey-connect-glossary.htm>.

16 Liaison Committee on Medical Education. Medical School Directory. 2015. <http://www.lcme.org/directory.htm>. Accessed March 4, 2015.



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