

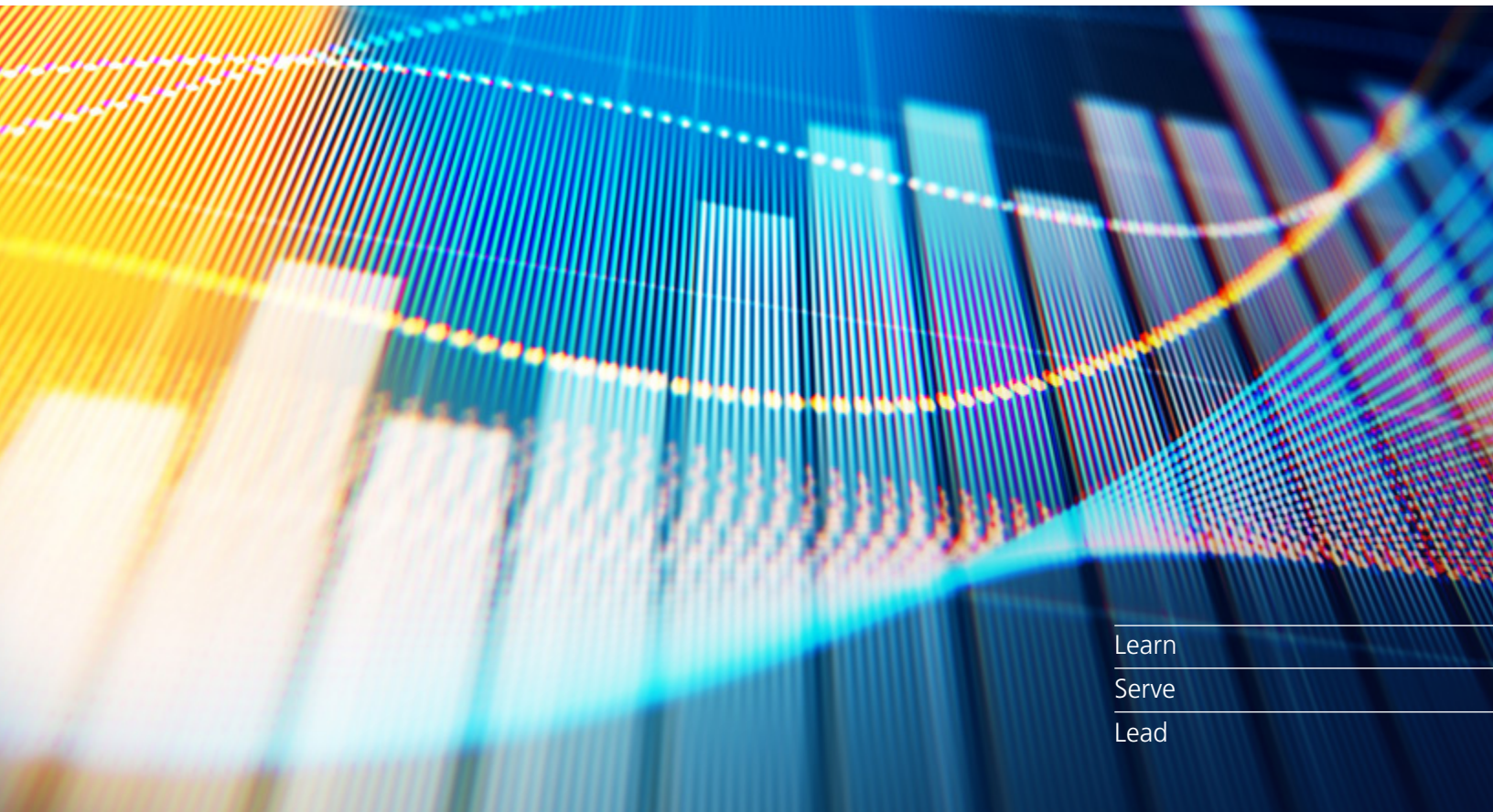


AAMC

Tomorrow's Doctors, Tomorrow's Cures®

# Results of the 2018 Medical School Enrollment Survey

July 2019



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**July 2019**

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## Executive Summary

This report examines first-year medical school matriculants over the past decade and projects first-year matriculants through 2026. The goal is to inform the academic medicine community, researchers, and policymakers about trends and issues related to U.S. medical school enrollment. The report is based on the 15th annual AAMC Survey of Medical School Enrollment Plans and data provided by the American Association of Colleges of Osteopathic Medicine. Each fall, the survey is sent to deans at all MD-granting U.S. medical schools with preliminary accreditation or higher from the Liaison Committee on Medical Education (LCME®). This most recent survey was conducted between November 2018 and January 2019.

Key findings include:

- **U.S. medical school enrollment has grown by 31% since 2002-2003; the 30% targeted growth was achieved in the most recent academic year.**

In 2006, in response to concerns about a likely future physician shortage, the AAMC recommended a 30% increase in first-year medical school enrollment by the 2015-2016 academic year (over 2002-2003 levels). Using the baseline of the 2002-2003 first-year enrollment of 16,488 students, a 30% increase corresponds to an increase of 4,946 students for a total of 21,434. The 30% goal was attained in 2018-2019 when first-year matriculation reached 21,622 students.

- **Concern remains high about the availability of graduate medical education opportunities at the state and national levels.**

Medical schools reported concern about enrollment growth outpacing growth in graduate medical education (GME). Forty-four percent of medical schools voiced concerns about their own incoming students' ability to find residency positions of their choice after medical school. Concern about GME availability at the state and national levels remained high in 2018 compared with 2015 and 2016, but it is below the peak in 2013. In 2018, 68% of schools reported concerns about GME in their state compared with 75% at the national level.

- **A majority of schools are concerned about the number of clinical training sites and available preceptors.**

In 2018, 85% of respondents expressed concern about the number of clinical training sites, and 88% of respondents expressed concern about the supply of qualified primary care preceptors. Seventy-seven percent expressed concern about the supply of qualified specialty preceptors. Only 24% of schools indicated that competition from DO-granting schools caused them no difficulty, and even fewer schools experienced no competition with other health care professions programs (15%). Forty-six percent of respondents reported pressure to pay for clinical training slots was a moderate to severe difficulty; 53% of schools currently do not pay for clinical training for their students.

- **Enrollment increases at DO-granting schools continue.**

First-year matriculation at DO-granting schools in 2018-2019 totaled 8,124, a 164% increase from 3,079 students in 2002-2003. Combined first-year matriculation at existing MD-granting and DO-granting schools increased by 10,179 students, a 52% increase compared with 2002-2003.

## Background

In 2006, in response to concerns about a future physician shortage, the AAMC recommended a 30% increase in enrollment in medical schools accredited by the LCME by 2015.<sup>1</sup> Using the first-year enrollment of 16,488 students in 2002-2003 as a baseline, a 30% increase would mean 21,434 first-year medical students, an increase of 4,946 students. The annual Survey of Medical School Enrollment Plans has monitored progress toward this goal.

To meet the 30% goal, the AAMC recommended enrollment expansion at existing medical schools and the creation of new medical schools. In 2002, the United States had 125 LCME-accredited medical schools. As of March 2019, the LCME had granted full, provisional, or preliminary accreditation status to 29 more medical schools, for a total of 154 U.S. MD-granting schools.<sup>2</sup> In addition, the American Osteopathic Association’s Commission on Osteopathic College Accreditation (COCA) lists 37 DO-granting schools operating at 57 sites during the 2018-2019 academic year, an increase of 17 DO-granting schools since 2002-2003.<sup>3</sup>

The LCME lists an additional two schools with applicant or candidate status (**Figure 1**). Although preaccredited schools cannot yet enroll students, some will probably attain accreditation in time to enroll students before 2026-2027.



**Figure 1.** New MD-granting schools accredited since 2002 or in the LCME accreditation process (as of March 2019).

This report includes enrollment projections for only the 154 MD-granting schools and enrollment data for the 37 accredited DO-granting schools as of March 2019.

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## Survey Methodology

The AAMC administered the 15th annual Survey of Medical School Enrollment Plans in November 2018 to the deans of 151 U.S. medical schools that were fully, provisionally, or preliminarily LCME-accredited at that time. 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, 137 responded (91%). The dean of the medical school or a designated appointee (most often an associate dean) provided the survey information.

Respondents were asked to provide their medical school's number of first-year matriculants for the current year, as well as their projected number of first-year matriculants for the next five years, ending with the 2023-2024 academic year. For 12 of the 14 schools that did not provide enrollment plans on the 2018 survey, the AAMC used plans reported from the 2017 survey. For the two schools that did not provide enrollment plans in 2017 or 2018, matriculant data for the 2018 academic year were substituted for each projected year. For the three medical schools that received preliminary accreditation after the survey was fielded, the AAMC used the anticipated matriculant counts from each school's website. Historical matriculant data in this report come from the AAMC Student Records System.

The survey asked schools to report their concerns about clerkship opportunities and GME placements. In addition, the survey included more detailed questions about the availability of clinical training sites by specialty and about the practices adopted by the institution to address shortages of clinical training sites and preceptors. This report presents trends by using available data from previous surveys when possible.

The AAMC also obtained data from the American Association of Colleges of Osteopathic Medicine about 2018-2019 enrollment in DO-granting schools, as presented on page 14.



## Results

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

First-year enrollment in LCME-accredited medical schools increased by 31% from the 2002-2003 baseline level to the 2018-2019 academic year. By 2023-2024, it is projected to increase by 39% from the 2002-2003 baseline level.

Of the 125 schools that were accredited as of 2002-2003, 13 (10%) plan to grow from 2019-2020 to 2023-2024. By comparison, six of the 29 schools accredited since 2002-2003 (23%) plan to grow during that period. Cumulatively, the 151 accredited medical schools that had enrolled students in 2018-2019 achieved the targeted 30% increase in enrollment from 2002-2003, with further increases expected in succeeding years (**Table 1**).

**Table 1. Summary of Baseline and Current First-Year Enrollment and Projected First-Year Enrollment Through 2023**

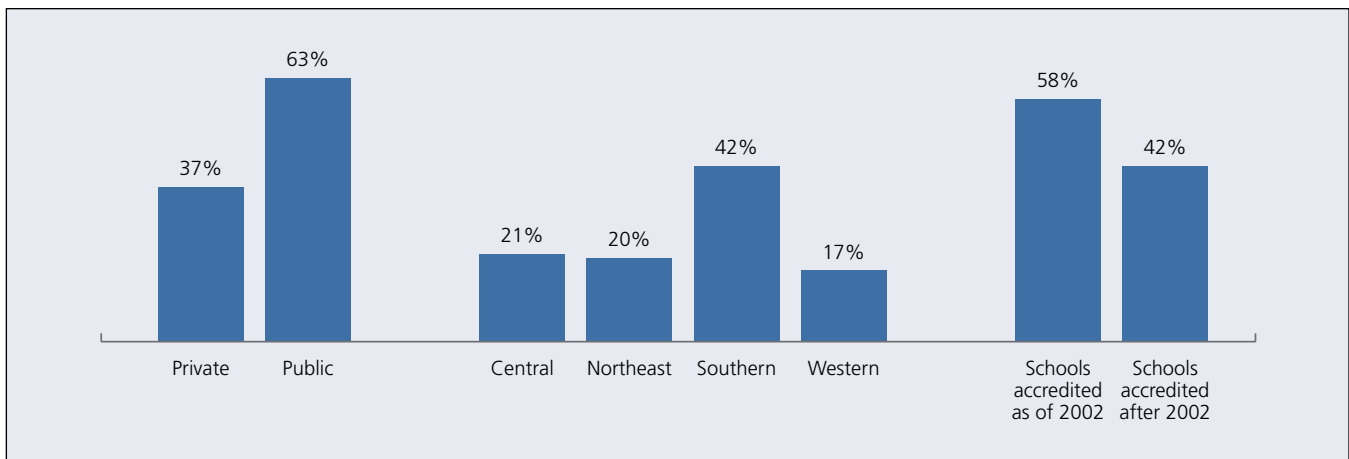
Group	Base	Current	Projected				
	2002	2018	2019	2020	2021	2022	2023
Schools accredited as of 2002 (n = 125)	16,488	19,528	19,669	19,831	20,061	20,140	20,219
Increase from 2002		3,040	3,181	3,343	3,573	3,652	3,731
% Increase from 2002		18.4%	19.3%	20.3%	21.7%	22.1%	22.6%
Schools accredited after 2002 (n = 29)*		2,094	2,257	2,407	2,513	2,602	2,673
Total (n = 154)**	16,488	21,622	21,926	22,238	22,574	22,742	22,892
Increase from 2002		5,134	5,438	5,750	6,086	6,254	6,404
% Increase from 2002		31.1%	33.0%	34.9%	36.9%	37.9%	38.8%

\*Includes 26 medical schools with matriculated students and three preliminarily accredited medical schools without matriculated students. These three medical schools are included in the enrollment projection displayed after 2018.

\*\*Includes 151 medical schools with matriculated students and three preliminarily accredited medical schools without matriculated students. These three medical schools are included in the enrollment projection displayed after 2018.

### Enrollment Growth by Public/Private Status, Region, and Accreditation Year

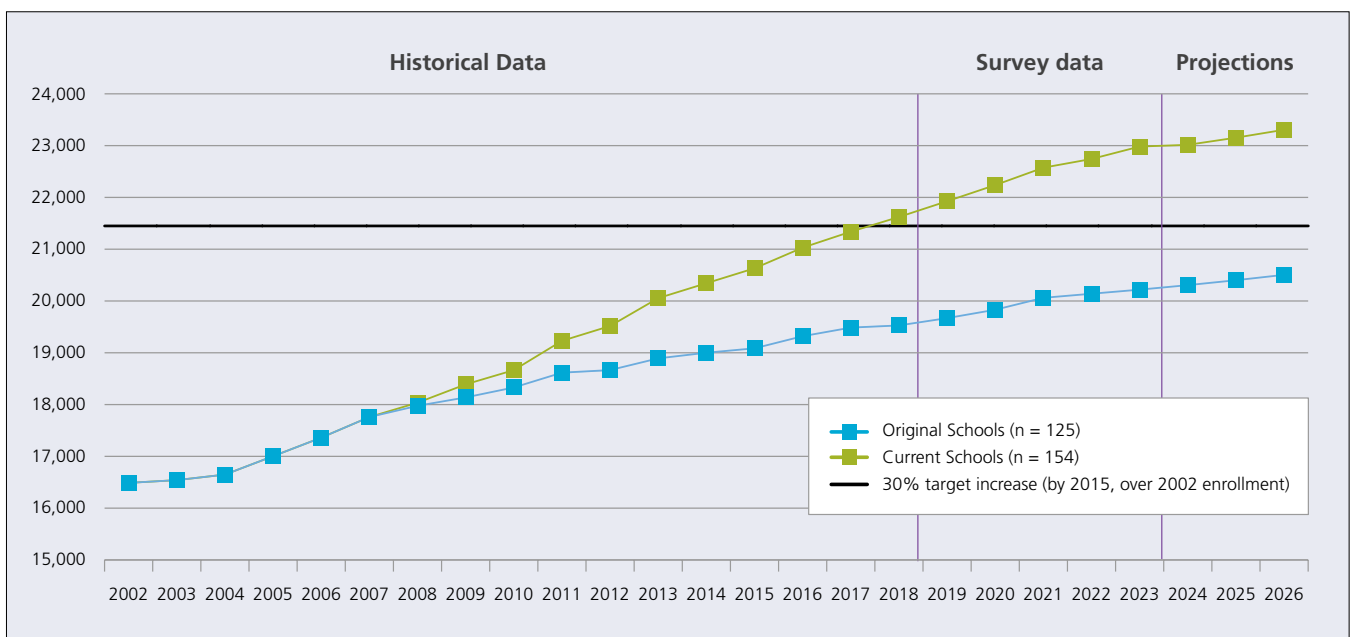
Based on these reported projections, increases at the 125 schools that were LCME-accredited as of 2002-2003 would account for 58% of the projected growth in first-year enrollment between 2002-2003 and 2023-2024. The growth at new schools since 2002-2003 would account for the remaining 42% of the overall 2002-2023 growth. The majority (63%) of the projected growth in enrollment between 2002-2003 and 2023-2024 is expected to occur at public schools. Nationally, schools in the Southern region would account for the largest portion (36%) of the projected increase in enrollment between 2002-2003 and 2023-2024 (**Figure 2**).



**Figure 2. Percentage of 2002-2023 growth by public/private status, region, and accreditation year.** First-year enrollment in 2002 is based on 2002 public/private status, and 2023 numbers are based on current public/private status. Two schools have changed public/private status since 2002. Central: Ill., Ind., Iowa, Kan., Mich., Minn., Mo., N.D., Neb., Ohio, S.D., Wisc.; Northeast: Conn., D.C., Dela., Maine, Mass., Md., N.H., N.J., N.Y., Pa., R.I., Vt.; Southern: Ala., Ark., Fla., Ga., Ky., La., Miss., N.C., Okla., P.R., S.C., Tenn., Texas, Va., W.V.; Western: Alaska, Ariz., Calif., Colo., Hawaii, Idaho, Mont., Nev., N.M., Ore., Utah, Wash., Wyo.

### Projections Beyond 2023

To project enrollment beyond 2023-2024, the last academic year for which the survey requested enrollment data, the rate of growth reported between the last two academic years of survey data for each school was applied, except a smoothed estimate was applied for one school that doubled enrollment in that year. Thirteen of the 125 schools accredited as of 2002-2003 and six of the 26 newly accredited schools projected they would grow from 2022-2023 to 2023-2024. Most remaining schools projected no growth during that year, and one school projected a small decline. Overall, enrollment is expected to grow by a small fraction of a percent per year from 2023-2024 to 2026-2027 (Figure 3).



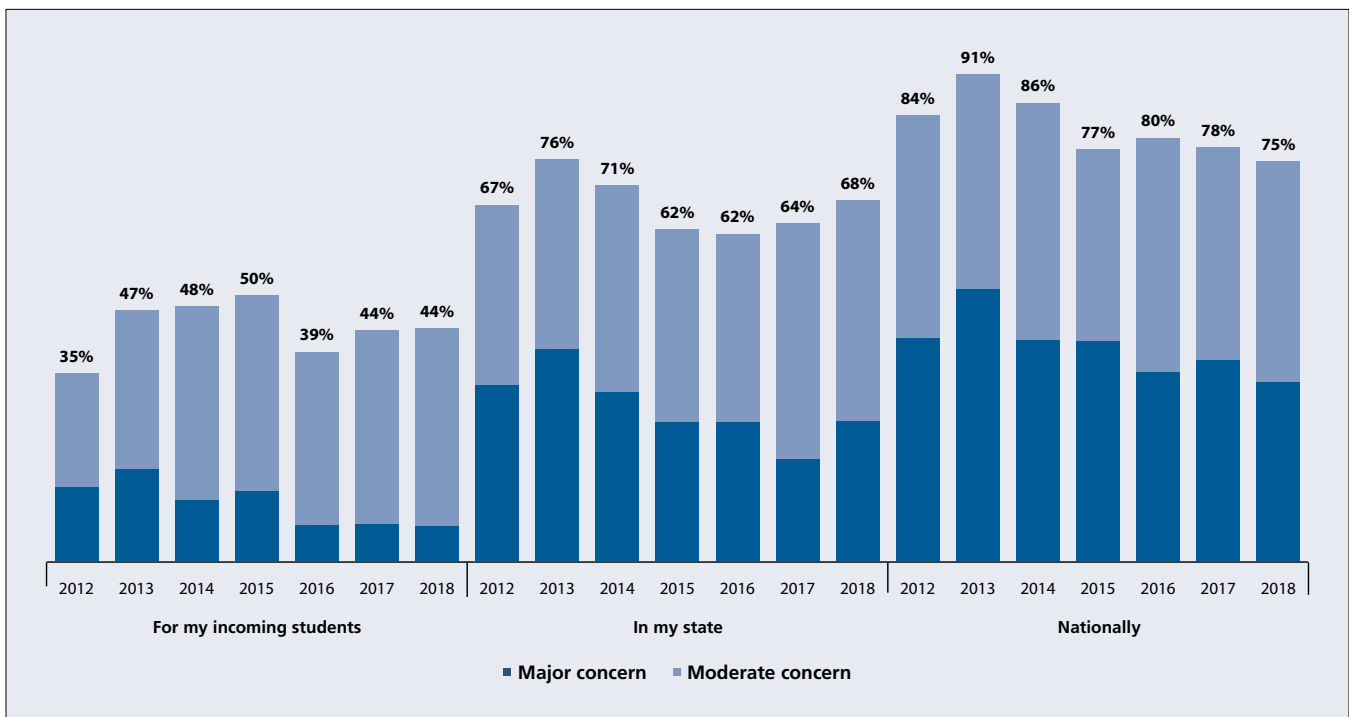
**Figure 3. Projected first-year enrollment through 2026.** Current schools include 151 medical schools with matriculated students and three preliminarily accredited medical schools without matriculated students. These three medical schools are included in the enrollment projections displayed after 2018.

**Residency/GME:**  
 Medical training that occurs after receiving the MD or DO degree, typically three to seven years at teaching hospital inpatient, outpatient, and ambulatory settings. Completing a GME program is required to be licensed and practice independently in the United States.

**GME Concerns**

Starting in 2012, the survey asked two questions about concerns relating to GME. The first 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 broadened the scope to 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.”

The percentage of respondents expressing “major” or “moderate” concern about their incoming students’ ability to find residency positions of their choice after medical school increased from 39% in 2016 to 44% in both 2017 and 2018 (Figure 4). Concern about the impact of medical school enrollment expansion on GME at the state level has risen since 2016, while national levels of concern have fallen somewhat. Both state and national concerns about GME have decreased from their peak in 2013. In 2018, 68% of schools reported concerns about GME in their state compared with 75% at the national level.



**Figure 4. Percentage of schools concerned about graduate medical education, 2012-2018.**

The prevalence of concern about GME at the state and local levels was compared by geographic region, public/private status, and whether schools were accredited before or after 2002, but there were no statistically significant differences.

**Clerkship/Clinical Training:**  
A core, or required, clinical course or rotation in a specialty that takes place during the third or fourth year of undergraduate medical education.

**Clinical Training Opportunities for Students**

The survey asked schools to rate their concerns about the number of clinical training sites, the supply of qualified primary care preceptors, and the supply of qualified specialty preceptors (Figure 5). Responses were collapsed into two categories: “concerned” and “not concerned.” Eighty-five percent of schools surveyed in 2018 were concerned about the number of sites, and 88% of schools were concerned about the supply of qualified primary care preceptors. The share of schools concerned about the supply of qualified specialty preceptors grew from just over half of schools surveyed in 2010 to 77% of schools surveyed in 2018.

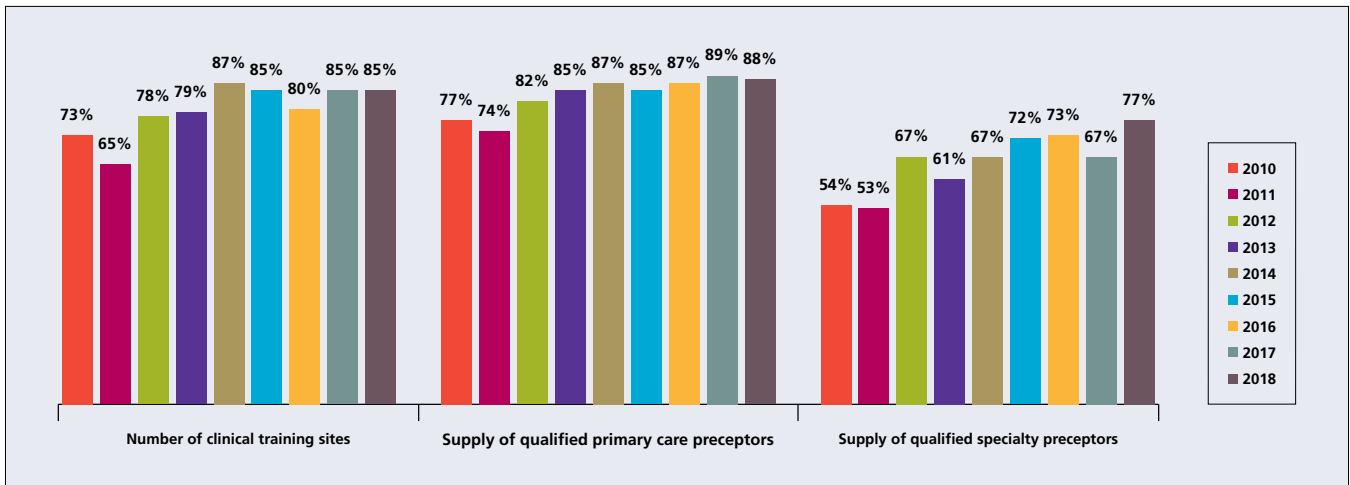
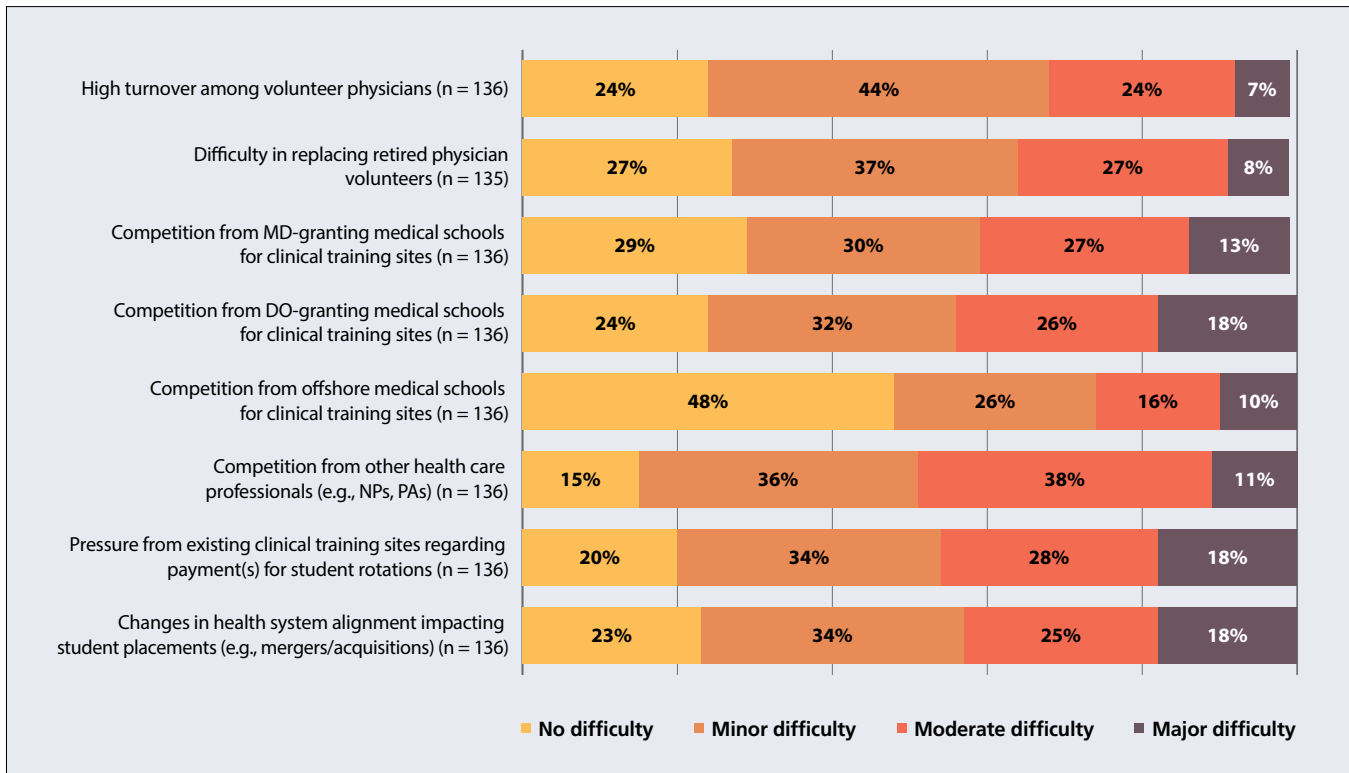


Figure 5. Percentage of schools concerned about clinical training opportunities and qualified preceptors, 2010-2018.

This year, the survey asked schools a combined question about whether they experienced difficulties with their existing clinical training sites and, if so, to report the level of difficulty they experienced (**Figure 6**). Competition for clinical training sites from other MD- and DO-granting medical schools and other health professions programs appears to pose the greatest challenge — 40% to 49% of schools reported such competition as a moderate or major difficulty.



**Figure 6.** Level of difficulty experienced with existing clinical training sites, by type of difficulty experienced.

### Payments for Clinical Rotations

Beginning in 2015, the survey asked the following question: “Do you currently pay for any of your students to have clinical rotations in either academic or nonacademic (i.e., community-based) training sites?” Respondents could select more than one option. While most schools (53%) in 2018 reported they do not pay for students’ clinical rotations, the percentage has declined from 64% in 2016. Currently, 20% of schools reported they pay for one student or more to rotate at both academic and nonacademic clinical sites (Figure 7).

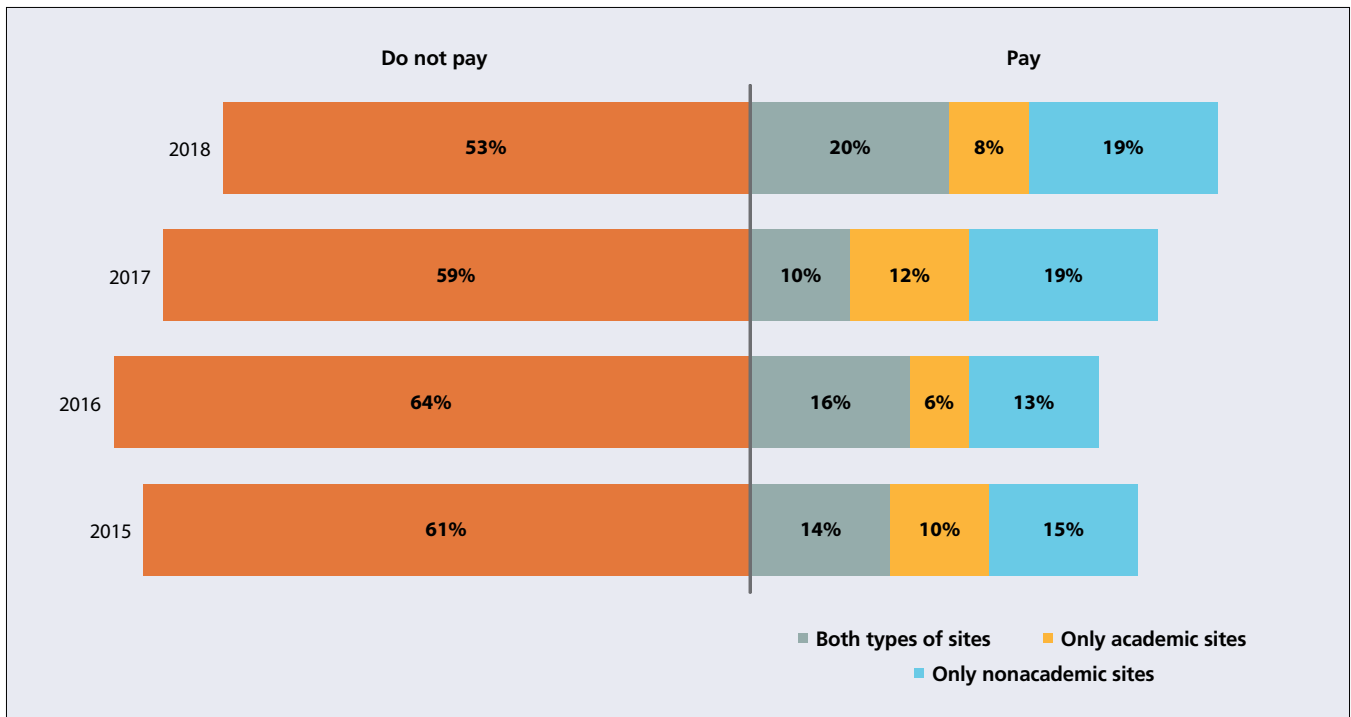


Figure 7. Percentage of schools currently paying for clinical rotations, 2015-2018.

### Strategies Used to Compete for Clinical Training Sites

The survey asked the following question: “What strategies (if any), other than paying money for clinical sites, are you using to compete for clinical training sites?” Respondents could select more than one option. Most schools rely on building strategic relationships (83%) and providing other nonfinancial incentives (77%) (Figure 8). In open-ended responses to the question, schools indicated that nonfinancial incentives could include library access, continuing medical education (CME), adjunct faculty titles, and, in one case, tuition reduction.

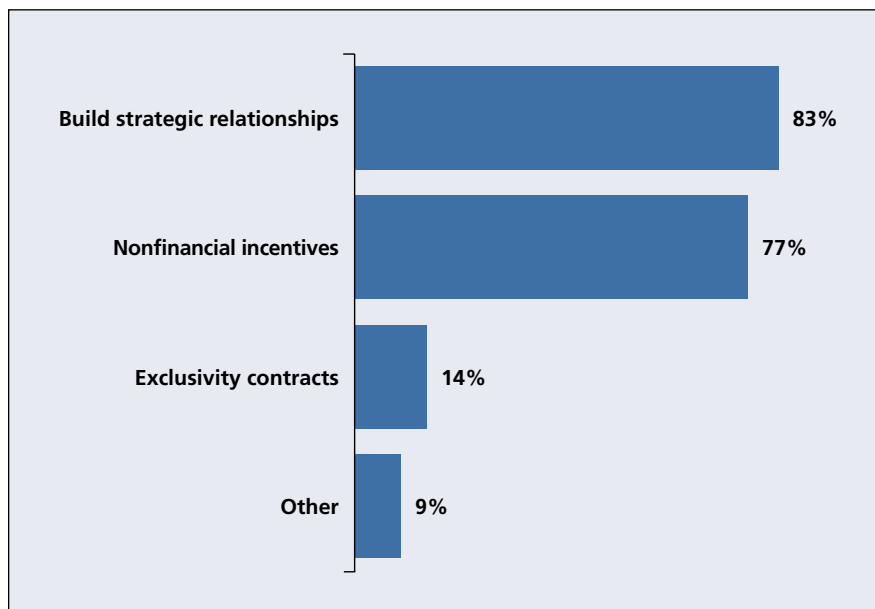
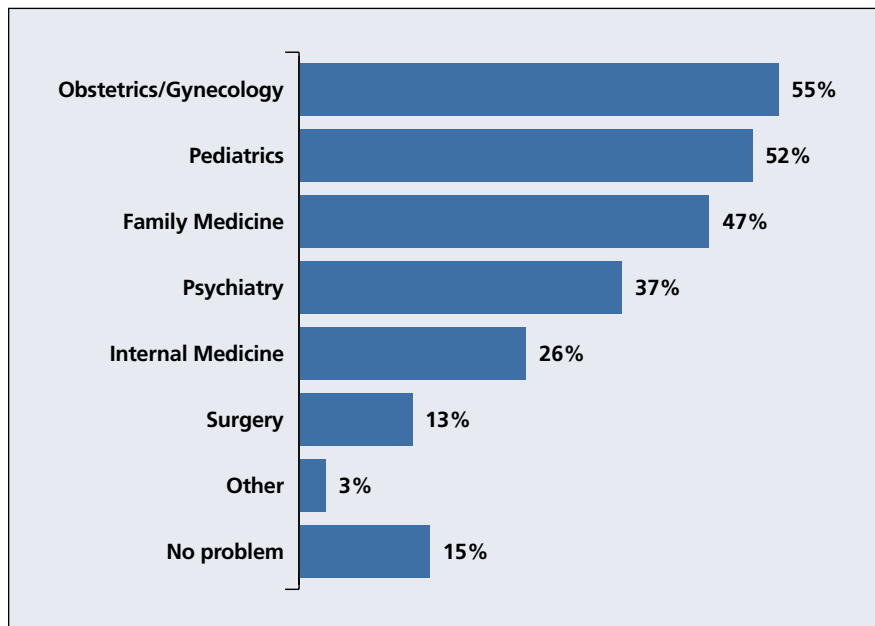


Figure 8. Strategies used to compete for clinical training sites (other than paying money).



### Specialties and Practice Areas That Are Particularly Difficult in Terms of Finding Clinical Training Sites

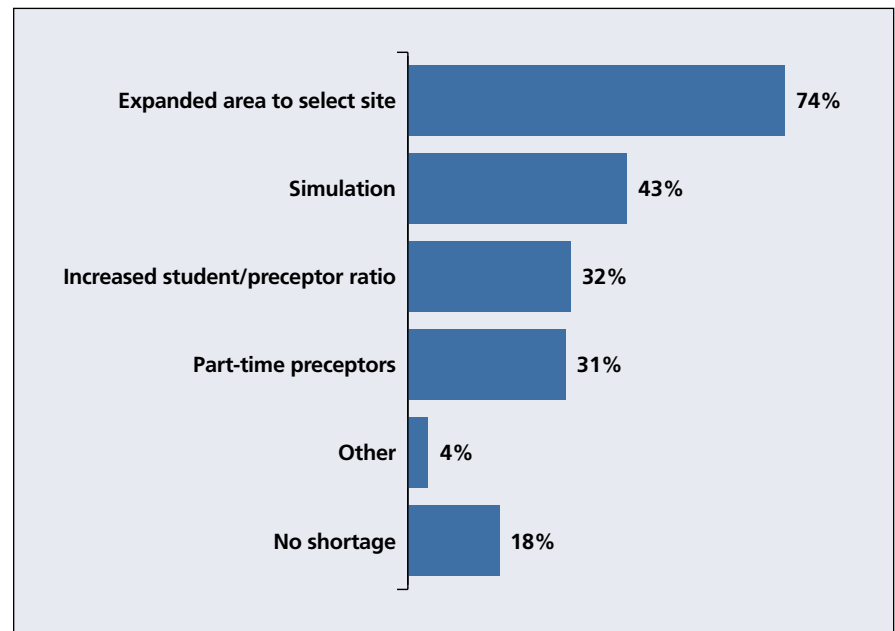
Respondents were asked to select from a list of specialties those they found most problematic for obtaining clinical training sites (if any). Over half of schools reported they experienced difficulty in finding clinical training sites for obstetrics/gynecology and pediatrics (**Figure 9**). In open-ended responses to the question, two schools also reported difficulty in finding sites for emergency medicine.



**Figure 9.** Difficulty finding clinical training sites, by selected specialties.

### Practices Adopted to Address the Shortage in Clinical Training Sites

Respondents were asked to select from a list of possible approaches to mitigating a shortage in clinical training sites and preceptors. Nearly three out of four schools (74%) indicated they have expanded the area where they look for clinical training sites, and over 40% rely on simulation activities to address the shortage (**Figure 10**). Four schools pointed to additional solutions, such as changing the amount of inpatient and outpatient time in a rotation and creating new electives that cross disciplines, such as for stroke and heart failure. One school reported it has decreased the number of admitted students.



**Figure 10.** Practices adopted to address shortages in clinical training sites and preceptors.

### Combined MD and DO Enrollment

In 2018, first-year enrollment in DO-granting schools totaled 8,124 students, representing a 164% increase over first-year enrollment in 2002.<sup>4</sup> Together, enrollment in MD-granting and DO-granting schools has increased by 52%; 10,179 more students were enrolled in first-year classes in 2018 compared with 2002 (**Table 2**). About half of that growth came from DO-granting schools.

**Table 2. MD and DO Enrollment Growth Since 2002**

	2002 Base	2018 Current		
	Enrollment	Enrollment	Increase (number)	Increase (percent)
MD	16,488	21,622	5,134	31%
DO	3,079	8,124	5,045	164%
Total	19,567	29,746	10,179	52%

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## Discussion

Over the past decade, the medical education community has responded to the AAMC's call for an increase in medical school enrollment to address a projected national shortage of physicians. Since 2002, the LCME has accredited 29 new medical schools, for a total of 154 LCME-accredited U.S. medical schools as of March 2019. Collectively, these schools expanded enrollment by 31% over 2002-2003 levels as of the 2018-2019 academic year, achieving the AAMC's 30% goal.

As student enrollment grows, school administrators are concerned about the number of available clerkship sites and the supply of preceptors. With the expansion of other health professions, clerkship opportunities are proving to be more competitive. Fewer than one-third of survey respondents indicated they did not experience competition with DO-granting schools and programs in other health professions, such as physician assistant and nurse practitioner programs. Certain specialties such as obstetrics/gynecology and pediatrics are particularly problematic in terms of finding sufficient clinical training sites. Many respondents continue to experience pressure to pay for clinical training slots, and a slight majority of schools currently does not pay for clinical training.

Enrollment expansion alone will not resolve the expected shortage of 46,900 to 121,900 physicians by 2032.<sup>5</sup> Medical schools achieved the 30% goal in enrollment growth and continue to increase beyond that 30% growth goal in future years, but entry-level residency positions accredited by the Accreditation Council for Graduate Medical Education are continuing to grow at a rate of only about 1% per year.<sup>6</sup> Forty-four percent of medical schools are concerned about their incoming students' ability to find a residency training position of their choice upon completion of medical school, and federal caps on Medicare-funded residency training positions remain effectively frozen at 1996 levels.

On the basis of feedback from stakeholders across the academic medicine community, the AAMC continues to focus on two areas of critical concern: (1) transition to residency<sup>7</sup> and (2) the learning environment and the well-being of individuals in that environment.<sup>8</sup> Continued monitoring of medical school enrollment is crucial to support these efforts to improve and optimize the graduate medical education system.

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## Appendix. New Schools Accredited Since 2002 or in the LCME Accreditation Process as of March 2019<sup>9,10</sup>

### Fully Accredited Since 2002 (n = 16)

- Central Michigan University College of Medicine (Michigan)
- Charles E. Schmidt College of Medicine at Florida Atlantic University (Florida)
- Cooper Medical School of Rowan University (New Jersey)
- Donald and Barbara Zucker School of Medicine at Hofstra/Northwell (New York)
- Florida International University Herbert Wertheim College of Medicine (Florida)
- Frank H. Netter MD School of Medicine at Quinnipiac University (Connecticut)
- Geisinger Commonwealth School of Medicine (Pennsylvania)
- Oakland University William Beaumont School of Medicine (Michigan)
- Texas Tech University Health Sciences Center Paul L. Foster School of Medicine (Texas)
- San Juan Bautista School of Medicine (Puerto Rico)
- University of Arizona College of Medicine - Phoenix (Arizona)
- University of California, Riverside, School of Medicine (California)
- University of Central Florida College of Medicine (Florida)
- University of South Carolina School of Medicine - Greenville (South Carolina)
- Virginia Tech Carilion School of Medicine (Virginia)
- Western Michigan University Homer Stryker M.D. School of Medicine (Michigan)

### Schools With Provisional Accreditation (n = 2)

- CUNY School of Medicine (New York)
- University of Texas at Austin Dell Medical School (Texas)

### Schools With Preliminary Accreditation (n = 11)

- California Northstate University College of Medicine (California)
- California University of Science and Medicine - School of Medicine (California)
- Carle Illinois College of Medicine (Illinois)
- Hackensack Meridian School of Medicine at Seton Hall University (New Jersey)
- Kaiser Permanente School of Medicine (California)
- New York University Long Island School of Medicine (New York)
- Nova Southeastern University Dr. Kiran C. Patel College of Allopathic Medicine (Florida)
- TCU and UNTHSC School of Medicine (Texas)
- University of Nevada, Las Vegas, School of Medicine (Nevada)
- University of Texas Rio Grande Valley School of Medicine (Texas)
- Washington State University Elson S. Floyd College of Medicine (Washington)

### Schools With Candidate Status (n = 0)

### Schools With Applicant Status (n = 2)

- College of Henricopolis School of Medicine (Virginia)
- University of Houston College of Medicine (Texas)

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## Notes

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