

Medical School Enrollment Plans Through 2013:

Analysis of the 2008 AAMC Survey

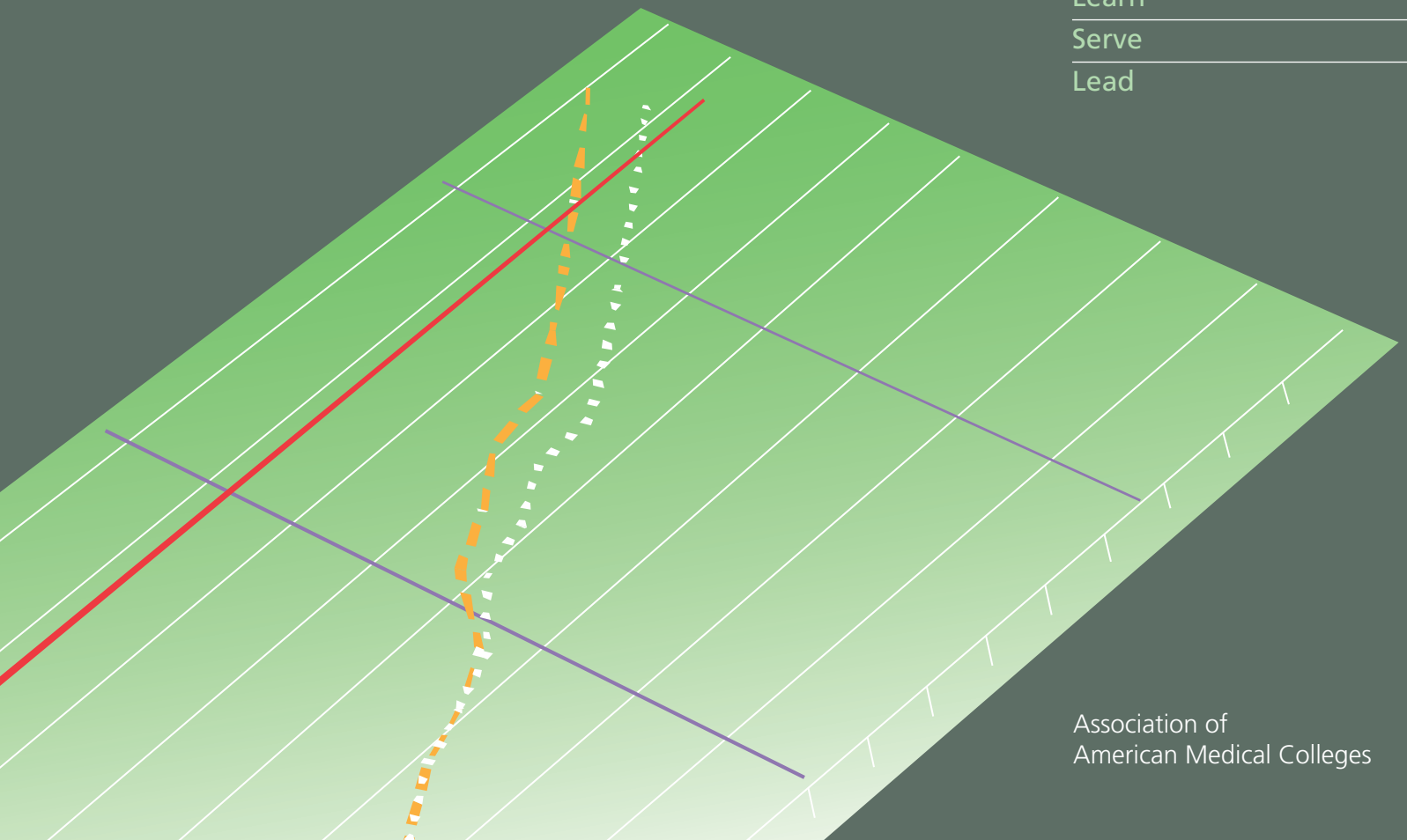
Center for Workforce Studies

May 2009

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Summary

Each year, the AAMC Center for Workforce Studies surveys medical schools regarding their enrollment plans for the next 5 years. Based on the 2008 survey, the AAMC estimates that first-year U.S. medical school enrollment will increase to 19,946 in the 2013 academic year. **This represents an increase of 21% (3,458) from the 2002 academic year.** Looking beyond 2013, this rate of growth will not lead to a 30% increase by 2015 as recommended by AAMC, but it could by 2017 or 2018.

Of the 125 U.S. medical schools accredited in 2002, 113 (90%) have increased enrollment or plan to increase enrollment in the next five years; this represents the vast majority (76%) of the overall projected enrollment growth. A portion of the growth comes from schools that have been accredited or received preliminary accreditation since 2002 (15%); and the balance (9%) reflects an estimate of enrollment from schools in the beginning stages of the Liaison Committee on Medical Education (LCME) accreditation process but not yet currently eligible to enroll medical students.

Thirty-three of the schools with expansion plans are targeting minority groups currently under-represented in medicine, rural areas, or under-served urban communities. Medical schools expressed continued concern over the availability of clinical training sites, which was cited as a barrier to expansion.

The American Association of Osteopathic Colleges of Medicine (AACOM) uses a similar survey to collect data in order to project future osteopathic enrollment. Osteopathic programs are projecting a continued rapid rate of growth in enrollment which will lead to a projected 79% increase between 2002 and 2013. AACOM projects 5,519 first year enrolled students in 2013, which would be 2,440 higher than 2002.¹

The combined growth in medical and osteopathic enrollment is projected to lead to an increase in first year students in 2013 of nearly 6,000. In the current environment, it appears unlikely that GME will expand at a sufficient pace to accommodate all of the increase in MD and DO graduates. Without an increase in GME positions, the impact of the growth in MD and DO enrollment on the overall supply of physicians will be limited.

Introduction/ 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 2002 first year enrollment of 16,488 students as a baseline. A 30 percent increase would lead to 21,434 first year medical students, an increase of 4,946 students per year.

The AAMC recommended that this goal be met by both increasing enrollment at existing medical schools and, where appropriate, the creation of new medical schools. The AAMC also recommended ongoing monitoring of supply and demand for physicians in order to continue to provide guidance to the medical education community and other interested parties.² The annual survey of medical school enrollment plans is part of the monitoring process.

¹ Preliminary Data from the 2008 Survey of Osteopathic Medical School Growth Plans

² AAMC Statement on the Physician Workforce (2006). Retrieved February 18, 2009, from <http://www.aamc.org/workforce/workforceposition.pdf>

In 2002, there were 125 medical schools, including the then preliminarily accredited, now fully accredited Florida State University College of Medicine. By 2008, one additional school had received LCME accreditation (San Juan Bautista) and four new medical schools (Florida International University College of Medicine, University of Central Florida College of Medicine, The Commonwealth Medical College, and Texas Tech University Health Sciences Center Paul L. Foster School of Medicine) were granted Preliminary Accreditation by the LCME, bringing the number of U.S. medical schools to 130.³ In addition, there are 5 schools that have been designated by the LCME as having “Applicant School” or “Candidate School” status. Though they cannot yet enroll students, they hope to receive “Preliminary” accreditation in time to enroll students before 2013. Finally, there are numerous local discussions reported in the media of at least eight other medical schools that at this point have not entered the LCME accreditation process. For purposes of this report, we have only included enrollment projections for the 130 schools that have received full or preliminary accreditation, and the five schools with LCME “Applicant School” or “Candidate School” status. (Refer to Appendix A for details).

Methodology

The AAMC Center for Workforce Studies administered the fifth annual survey of medical enrollment plans to U.S. medical schools in the fall of 2008. Most of the information contained in this report is from their responses. The Center also gathered public information regarding new medical schools either in the planning stages or under discussion in order to provide more detail regarding the future of allopathic medical school enrollment. Further, data were received from the American Association of Osteopathic Colleges of Medicine (AACOM) on enrollment plans at osteopathic programs.

The deans of 129 LCME accredited or preliminarily accredited U.S. medical schools were asked to participate in the survey in the fall of 2008⁴. An e-mail introduction of the survey was sent out followed by a link to the web survey itself. Follow-up reminder e-mails were sent to deans who did not initially respond. Of the schools surveyed, 121 (94%) responded to the survey. The survey was completed by the dean of the medical school or their designated appointee, most often an associate dean. While the survey was designed to be anonymous, each of the 121 responding schools identified themselves for tracking purposes.

Respondents were asked to provide their medical school’s enrollment for the current year as well as their anticipated enrollment for the next five years, ending with the 2013-14 academic year. For schools that did not respond in 2008, first year enrollment in 2008 from the AAMC student records system was projected forward through 2013 with no change in class size. The information provided by the respondents was self-reported, though current year enrollment was validated with an independent source.

For this report, our calculations only include schools somewhere in the LCME accreditation process. Except where noted otherwise, projected increases represent the increases of enrollment above the baseline year of 2002.

³ Institutions with Developing Medical Education Programs that have Applied for Preliminary Accreditation by the LCME (2009). Retrieved March 3, 2009, from <http://www.lcme.org/newschoolprocess.htm>

⁴ One currently preliminarily accredited school was not included in the initial 2008 survey as its status was granted after the survey was released. However, this school did provide planned enrollment figures via e-mail communication.

As a supplement to the enrollment survey administered to the 129 accredited schools, the AAMC requested data from each of the Applicant and Candidate Status schools. Four schools are anticipating enrollment of a first class in 2010. Figure 1 shows the estimated class sizes for the new institutions.

Results

Ninety eight (78.4%) of the 125 schools accredited by the LCME in 2002 had increased their first year enrollment by the 2008-09 academic year. An additional 15 schools show plans to increase by 2013-14 for a total of 113 schools (90.4%) accredited in 2002 having either already increased or planning to increase first year enrollment.

With the inclusion of applicant schools, the total planned enrollment for academic year 2013-14 is 19,946 (Figure 1). This total represents a 21% increase from the baseline year of 2002-03.

Figure 1. Projected First Year Enrollment for Current and New Schools.

	Baseline	Projected				
	2002 ⁵	2009	2010	2011	2012	2013
Schools accredited in 2002 (125)	16488	18125	18546	18723	19011	19123
Accredited schools since 2002 (5)		228	292	384	456	508
130 schools accredited as of 2008	16488	18353	18838	19107	19467	19631
Applicant Schools as of 2009 (5)		40	160	220	280	315
Total (135)	16488	18,393	18,998	19,327	19,747	19,946
% increase from 2002		11.6%	15.2%	17.2%	19.8%	21.0%
# increase from 2002		1,905	2,510	2,839	3,259	3,458

When looking just at projected increases in enrollment over the next five years, for the 121 schools that completed the survey, the majority of schools (n=68, 56.2%) project no change in enrollment in the next five years, 54 (44.6%) schools show they are planning to increase or continue to increase in the next five years, and 6 schools (4.9%) show a decrease.

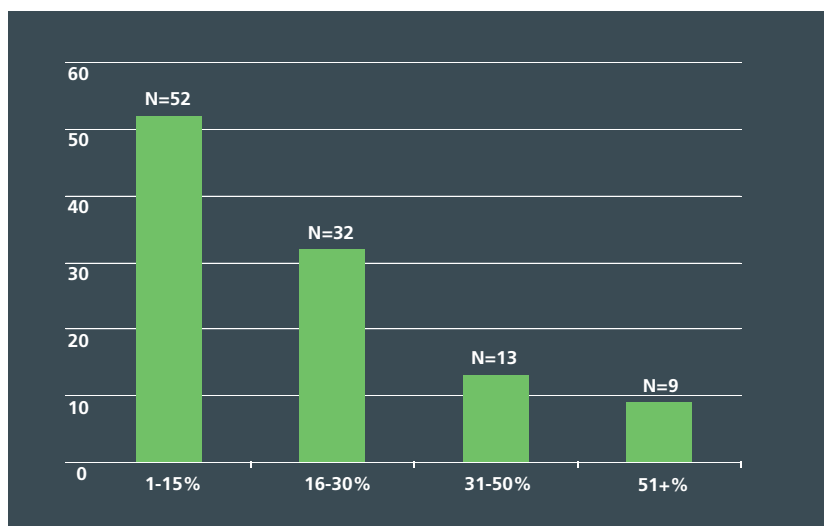
The cumulative number of first year positions for the 130 LCME accredited medical schools, as of 2008, is projected to increase by 19.1% (3,143 positions) by 2013, and has already increased 9.4% (1,548 positions) as of the 2008 enrollment period.

For schools showing a decrease, the decline ranges from 2 to 16 positions, and the decreases will all be effective or phased in during the next academic year (2009-2010). Four of the six schools planning a decrease had already increased enrollment since 2002-03, and the net effect of the decrease will leave them equal to or slightly above their 2002 first year enrollment.

⁵ Table 4: Matriculants to U.S. Medical Schools by State of Legal Residence, 1997-2008 (2008) Retrieved October 17, 2008, from <http://www.aamc.org/data/facts/2008/2008slrmat.htm>

Of the 90.4% of the original 125 LCME accredited schools that have increased or plan to increase enrollment between 2002 to 2013, the scale of increase varies widely (Figure 2). Fifty-two schools (40%) report increases of 1-15 percent. Thirty-two schools (24.6%) report an increase of 16-30 percent, thirteen schools (10%) report 31-50 percent increases, and nine schools (6.9%) indicate a 51 percent or greater increase.

Figure 2. Distribution of Number of Schools by Percent Change (2002 to 2013) in First Year Enrollment for Schools Accredited in 2002



Distribution of Growth from the Existing 130 Medical Schools

Of the 3,143 projected new positions from the existing 130 medical schools, 847 (26.9%) would come from private institutions and 2,296 (73.1%) from public institutions. Regionally, the southern and western schools are showing larger projected increases than the central or northeast schools. (Figure 3)

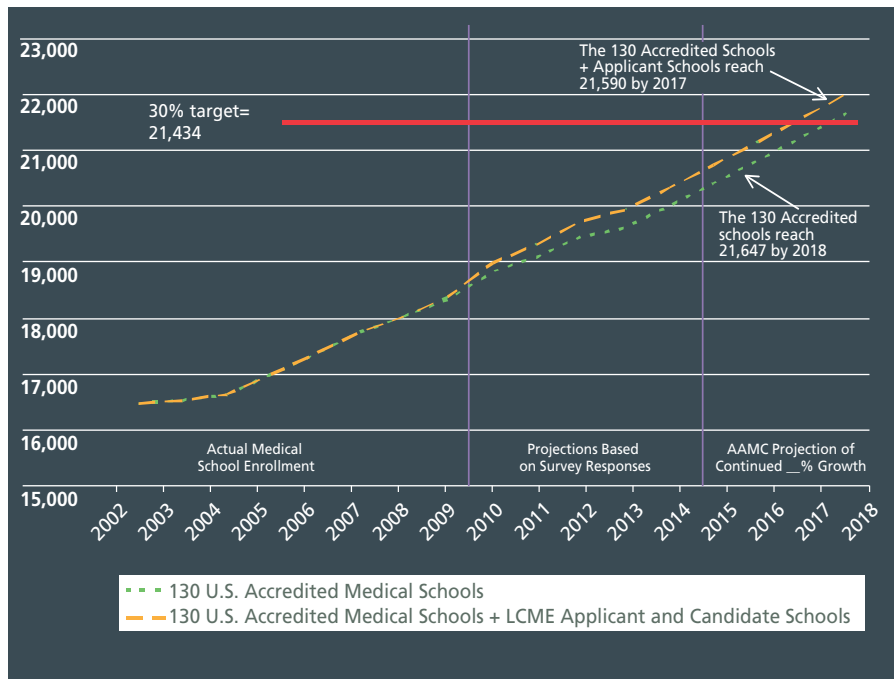
Figure 3. Planned Increase in First Year Enrollment by Institution Type and Region

	Baseline Enrollment 2002-03	Planned Increase by 2013-14	Percent increase from baseline
Institution Type			
Private	6607	847	12.8%
Public	9881	2296	23.2%
Region			
Central	4497	555	12.3%
Northeast	5021	504	10.0%
South	5129	1699	33.1%
West	1841	385	20.9%
All Schools	16488	3143	19.4%

Projected Enrollment Beyond 2013

Although expected increases fall short of the AAMC’s call for 30 percent growth by 2015, existing schools show substantial increases in first year enrollment. Projecting beyond 2013 (using the historical rate of growth), the existing schools would reach the 30 percent increase by 2018. With the addition of LCME applicant and candidate schools the goal would nearly be reached by 2017. (Figure 4)

Figure 4. Projected Number of New Enrollment in 2013 and Beyond

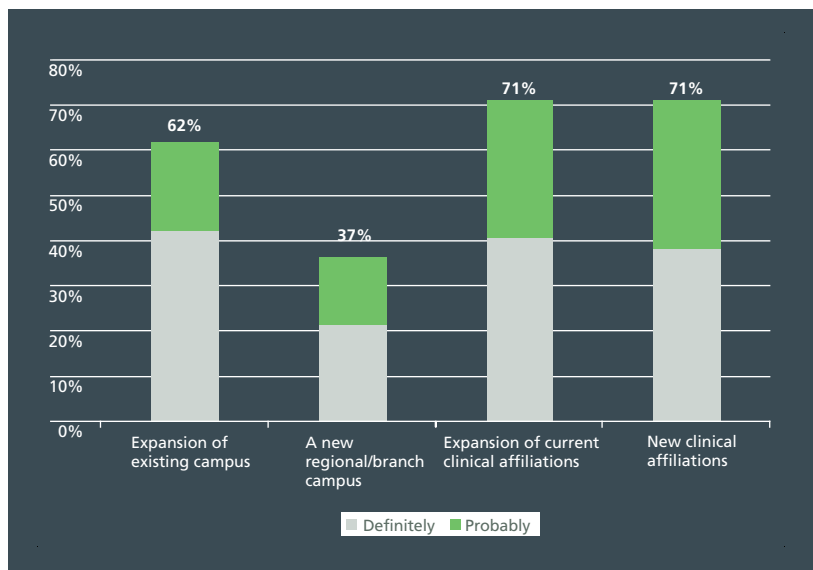


Accommodating Expanding Class Sizes

When counting the enrollment reports from all 135 medical schools (130 currently accredited and 5 in the accreditation process), the projected growth in enrollment would increase the mean class size from 132 in 2002 to 148 in 2013.

Respondents who increased first year enrollment or had plans to increase first year enrollment in the next five years were asked to elaborate on their expansion plans. The majority of schools responded to these questions. Schools are more likely to consider accommodating increases in class size by expanding existing campuses (62%) rather than adding a new regional or branch campus (37%) but were equally likely to consider the option to expand current clinical affiliations (71%) or seek new clinical affiliations (71%). (Figure 5)

Figure 5. Plans to Add or Expand Clinical Affiliations



Schools were also asked whether their expansion plans were targeted to a specific population. Thirty-three schools (21.9%), out of the 81 who responded to the question, indicated such plans. The majority of respondents indicated targeting more than one population group. The most common targets for expansion were indicated as minority groups currently underrepresented in medicine and rural communities. (Figure 6)

Figure 6. Increase in Enrollment Targeted to Specific Populations

Targeted Population	# of schools*
Minority groups currently underrepresented in medicine	23
Rural communities	21
Urban underserved communities	17

*schools could indicate more than one target population

Activities Taken Related to Expansion

Most medical schools have undertaken activities related to expansion to determine how or whether to increase their class size. Of the 92 schools who indicated participating in the activities related to expansion, 79% assessed the financial need/ implications of expansion, and 61% assessed the depth and quality of the applicant pool. Two out of three are either constructing new teaching space and/or reconfiguring existing space. Nearly half (49%), have added new clinical training sites or hired new faculty (43%). Yet, only 26% obtained additional state funding for expansion. (Figure 7)

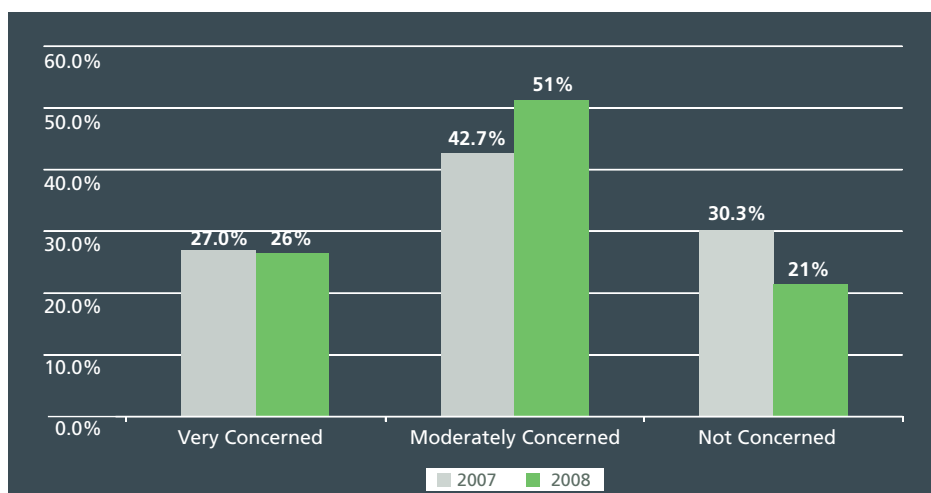
Figure 7. Activities Related to Expansion

Expansion Related Activity	# of Schools	% of question respondents (92)
Conducted an assessment of the financial need and/or implications of expansion	73	79%
Constructed new teaching space and/or reconfiguring existing space	62	67%
Conducted an assessment of the depth and quality of applicant pool	56	61%
Developed new teaching or curriculum methods and practices	53	58%
Added new clinical training sites	45	49%
Hired new faculty	40	43%
Obtained additional state funding for expansion	24	26%
Hired consultants to conduct studies/analysis related to expansion	13	14%

Clinical Training Sites

As the availability of clinical training sites could provide a barrier to expansion, schools were asked to rate their level of concern about the possibility of shortages in clerkship positions for their students. Of the 121 schools who responded to the survey, sixty-two schools (51%) noted being “moderately concerned” with possible shortages of clinical training sites for their students. Thirty-two schools (26%) noted they were “very concerned”, and twenty-six schools (21%) noted being “not concerned”. The concern appears to be increasing when compared to results from the 2007 survey. (Figure 8)

Figure 8. Concern with Clinical Training Sites



Challenges to Expansion

Respondents were also asked to indicate the three top challenges for increasing medical school enrollment in an open-ended question. Though the responses varied, several themes emerged. Consistent with the earlier question about clinical sites, over half of the schools (57%) indicated concern about the adequacy and availability of clinical training sites, and similar percentages (51%) were concerned about classroom and lab space. As with previous surveys, there is little concern about the adequacy of the applicant pool to support expansion. However, earlier surveys showed high levels of concern with scholarships for students, but that was not raised, by many, as an issue in this survey. (Figure 9)

Figure 9. The Number and Percent of Schools Indicating Top Challenges to Expansion

Challenges to Expansion	% of Schools	# of Schools
Adequate and available clinical sites for students	57%	69
Classroom and lab space to meet growing class size	57%	69
Faculty, not only size but also time and retention. Faculty resistance was also mentioned.	51%	62
Funding, often noted as state funding, but also general funding to build and maintain a new space needed to expand	44%	53
Applicant pool	5%	6
Scholarships available to students	5%	6

Osteopathic Enrollment Projections

The American Association of Osteopathic Colleges of Medicine (AACOM) uses a survey similar to the AAMC survey to collect their future enrollment figures. The 2008 enrollment numbers (4,732) show a 53.7% increase from the first year enrollment in 2002 (3,079). Further growth is expected for 2009 with a projected first year enrollment of 4,994 students, yielding a 62.2% increase from 2002. Furthermore, AACOM projects 5,519 first year enrolled students in 2013, a 79.2% increase from 2002.⁶

Figure 10 presents the projected growth for both medical and osteopathic first year enrollment. While first year osteopathic enrollment is rising far more rapidly than for medical schools (79% compared to 21% through 2013), absolute growth is greater for medical schools (3,458 vs. 2,440 for DO programs). The combined growth creates nearly 6,000 additional first year students by 2013, representing a considerable increase in opportunities for Americans to become physicians.

Figure 10. Enrollment Projections for Allopathic & Osteopathic First Year Enrollment

	2002	2009	# increase	% increase	2013	# increase	% increase
MD	16,488	18,353	1,865	11.3%	19,946	3,458	21.0%
DO	3,079	4,994	1,915	62.2%	5,519	2,440	79.2%
Total	19,567	23,347	3,780	19.3%	25,465	5,898	30.1%

⁶ American Association of Colleges of Osteopathic Medicine. (2009, February). Preliminary data from the 2008 survey on osteopathic medical school growth plans. Chevy Chase, MD: Tom Levitan

Discussion

Will the AAMC goal of a 30% increase in 1st year medical school enrollment by 2015 be reached?

In its 2006 workforce position statement, the AAMC recommended that medical school enrollment in the US be increased by 30%⁷. Based on the data presented in this report it appears that enrollment will rise by 30% by 2017 or 2018. It could be sooner if the schools in the LCME review process and those under discussion at the local level move forward more rapidly than now planned.

On the other hand, the recession appears to be slowing medical school expansion which may make achieving the goal before 2017 less likely. A majority of the expansion expected by 2013 (73%) comes from expansion at publicly sponsored medical schools. The financial pressures states are facing could slow further expansion.

The AAMC position statement suggested that the increase in enrollment should come from both growth at existing schools and new medical schools. That has been the case. Expansion at the 125 LCME schools accredited in 2006 is expected to comprise 76% of the growth anticipated by 2013; schools accredited since then or under review by the LCME are estimated to account for 24%. It would appear that most of the growth after 2013 will come from the newer schools.

Concern regarding clerkship site shortages has grown since the 2007 medical school enrollment questionnaire (see Figure 8) with 76% of respondents indicating they were “moderately concerned” or “very concerned” regarding the possible shortages of clinical training sites for their students compared to 69.7% in 2007. New York medical schools in particular may feel strain due to Caribbean medical schools contracting with New York City’s hospitals to provide hundreds of clinical training positions to their students.^{8,9} This development could discourage expansion of medical school enrollment or certainly make it more difficult.

Will the AAMC recommendation for a concomitant increase in GME be reached?

The goal of the 2006 position statement was to increase the supply of physicians to help assure future access to needed medical services. Therefore, the position statement also called for an increase in graduate medical education (GME) positions to accommodate the recommended increase in MD enrollment. A 30% increase in 1st year medical school enrollment above the 2002 level would lead to an increase of nearly 5,000 MD graduates, all of whom would need to enter GME before becoming licensed to practice. Currently, more than 7,000 international medical school graduates (IMGs) enter GME each year. If GME positions are not increased, it is likely that the expansion of MD graduates would lead to a parallel reduction in IMGs without an increase in physician supply to serve the nation.

⁷ AAMC Statement on the Physician Workforce (2006). Retrieved February 18, 2009, from <http://www.aamc.org/workforce/workforceposition.pdf>

⁸ Hartocollis, A. (2008) New York hospitals create outcry in foreign deal. Retrieved February 10, 2009, from <http://www.nytimes.com/2008/08/05/nyregion/05grenada.html>

⁹ Ross university school of medicine expands clinical rotations in new york (2008). Retrieved March 3, 2009, from <http://www.reuters.com/article/pressRelease/idUS169749+13-Feb-2008+BW20080213>

Between 2002 and 2007, the number of first year residents without prior GME increased by 1,672¹⁰ compared to an expected increase in 1st year medical school enrollment between 2002 and 2009 of 1,865. Based on these numbers alone, it might appear that GME is keeping pace with increased medical school enrollment. However, the financial challenges facing hospitals may lead to a slowing up in growth in GME positions. Furthermore, since about half of the graduates of osteopathic schools also enter ACGME residency programs and DO enrollment is rising rapidly with an increase of 1,534 first year DO students between 2002 and 2009, GME growth is unlikely to be able to keep pace with the combined growth of MDs and DO graduates; most likely leading to a reduction in IMGs entering GME.

Is the expansion responding to the social mission of medical education?

A recent meeting of leaders in the medical education field called on medical schools to be responsive to the social and community needs of the country beyond merely increasing the number of graduates.¹¹ As indicated in this report, many of the schools expanding enrollment are also focusing on increasing diversity in medicine as well as rural and underserved communities.

In addition, the most rapid growth in medical school enrollment has been in the Southern and Western regions of the U.S, where population growth was greatest from 1980 and 2005, when there was no expansion in medical school enrollment, and where the lowest medical student to population ratios are currently found.

How accurate are the projections?

When projecting enrollment there is always a concern for accuracy, especially when asking respondents to project five years into the future. Since the 2008 survey is the fifth year of reporting, prior projections for 2008 were compared against actual first year enrollment in 2008 (18,036). The prior year projections for 2008 were within 5% of the actual. The projections made in 2006 and 2007 were within 1% of the actual. Prior projections slightly underestimated the actual growth. The accuracy of past projections is encouraging, although the recession could reduce the accuracy of projections for the next five years.

¹⁰ Salsberg, et. al. (2008) *US residency training before and after the 1997 balanced budget act*. JAMA. 300(10):1174-1180

¹¹ Chairman's summary of the conference: Revisiting the medical school educational mission at a time of expansion. Retrieved March 30, 2009, from http://www.josiahmacyfoundation.org/documents/Macy_MedSchoolMission_10_08.pdf

Appendix A. New or Potential Schools

Institutions (State)	State	Notes
Schools with LCME “Preliminary Accreditation” Status		
Florida International University College of Medicine	Florida	Plans to enroll first class in 2009*
University of Central Florida College of Medicine	Florida	Plans to enroll first class in 2009*
The Commonwealth Medical College	Pennsylvania	Plans to enroll first class in 2009*
Texas Tech University Health Systems Center Paul L. Foster School of Medicine	Texas	Plans to enroll first class in 2009*
Schools with LCME “Candidate School” Status		
Virginia Tech Carilion School of Medicine	Virginia	Plans to enroll first class in 2010*
Schools with LCME “Applicant School” Status		
Scripps School of Medicine	California	Goal is to enroll first class in 2013*
Oakland University William Beaumont School of Medicine	Michigan	Goal is to enroll first class in 2010*
Touro University College of Medicine	New Jersey	Goal is to enroll first class in 2010*
Hofstra University School of Medicine	New York	Goal is to enroll first class in 2010*
Other possible new medical schools based on media reports (not included in projections)		
University of California - Riverside	California	Plans may slow due to economy ¹²
University of California - Merced	California	Plans may slow due to economy ¹³
Idaho State University	Idaho	Yet to establish funding ¹⁴
University of Houston	Texas	Hopes to send the proposal to the legislature in 2009 ¹⁵
Central Michigan University	Michigan	Hopes to enroll first class in 2012 ¹⁶
University of Texas, Austin	Texas	Plans are on hold ¹⁷
King College	Tennessee	Plans to enroll first class in 2012 ¹⁸
Western Michigan University	Michigan	Has hired consultants to assess need and is moving forward ¹⁹

*Data gathered during 2008 AAMC Dean’s Enrollment Survey.

¹² Gang, D. (2009) UCR med school start up funds not in latest state budget proposal. Retrieved May 6, 2009, from http://www.pe.com/localnews/politics/stories/PE_News_Local_S_medical16.4434c8c.html

¹³ Schoch, D. (2008) Economy threatens med school plans: State budget crisis puts target start date in peril. Retrieved January 7, 2009, from <http://www.modbee.com/local/story/532074.html>

¹⁴ Med school stance revised. (2008). Retrieved January 5, 2009, from <http://www.journalnet.com/articles/2008/08/26/news/breaking/1.txt>

¹⁵ Ackerman, T. (2007). UH exploring proposal to start medical school: Idea to partner with methodist, cornell comes amid projected doctor shortage. Retrieved February 26, 2009, from http://www.chron.com/CDA/archives/archive.mpl?id=2007_4272336

¹⁶ Barber, B. (2008). Central michigan university officials test mid-michigan support for saginaw medical school. Retrieved April 21, 2009, from, http://www.mlive.com/saginawnews/business/index.ssf/2008/04/central_michigan_university_of.html

¹⁷ Elder, L. (2009) Austin medical school plans flat line. Retrieved May 6, 2009, from <http://galvestondailynews.com/blog.lasso?permalink=fb34b47cd3dd14bd>

¹⁸ King college to pursue development of a four-year medical school. (2008). Retrieved May 6, 2009, from <http://news.king.edu/NewsArticle.asp>

¹⁹ Schultz, M. (2008). Will a medical school boom ease the doctor shortage? Retrieved April 21, 2009, from <http://www.detnews.com/apps/pbcs.dll/article?AID=/20081114/SCHOOLS/811140398/1026>



**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