AAMC

Tomorrow's Doctors, Tomorrow's Cures®

Physician Education Debt and the Cost to Attend Medical School

2012 Update

February 2013

Association of
American Medical Colleges

AAMC
Tomorrow's Doctors, Tomorrow's Cures®

Physician Education Debt and the Cost to Attend Medical School
2012 Update

James "Jay" Youngclaus
Julie A. Fresne

February 2013

Acknowledgements
The authors wish to thank the following AAMC staff for their review of and comments on earlier drafts of this report: Sue Bodilly, Mary Beth DeVilbiss, Clese Erickson, Anne Farmakidis, Julie Gilbert, Jennifer Gold, Paul Jolly, Nicole Knight, Kirke Lawton, Marc Nivet, John Prescott, Matthew Shick, Elisa Siegel, Henry Sondheimer, Phil Szenas, Chris Tucker, Mary Patton Wheatley, Shelley Yerman, and Geoffrey Young.

This report was produced by the staff of the AAMC's FIRST for Medical Education program, which helps members of the academic medicine community navigate the complexities of financial aid, student debt, and money management. For more information, contact FIRST@aamc.org or visit www.aamc.org/first.

This is a publication of the Association of American Medical Colleges. The AAMC serves and leads the academic medicine community to improve the health of all. www.aamc.org

Association of
American Medical Colleges

AAMC

Table of Contents

Executive Summary 1

Introduction 2

Type of School and Education Debt 2

Current Trends in Cost of Attendance 3

Debt Differences by Gender 6

Premedical and Non-Education Debt 6

Grants and Scholarships 7

Education Debt Across Family Income Levels 8

Debt Differences in Race and Ethnicity 9

The Role of Debt in Specialty Choice 11

Factors Influencing Borrowing and Repayment 13

Repayment Scenarios 14

Final Note 16

Executive Summary

This report builds on the work of the AAMC's Paul Jolly, particularly his 2004 report *Medical School Tuition and Young Physician Indebtedness* and its 2007 update. This report updates some of Jolly's original analyses with 2012 data and includes some new analyses of medical school costs and the education debt of medical school graduates.

Key findings include:

- The median education debt for indebted medical school graduates in 2012 was $170,000, and 86 percent of graduates report having education debt.
- Graduates from private medical schools are slightly less likely to have debt but typically have higher levels of debt than public medical school graduates. Controlling for type of school attended can be key to understanding some of the debt differences between groups of graduates.
- Debt levels for indebted medical school graduates and medical school cost of attendance have both increased faster than inflation over the last 20 years.
- There were virtually no differences between men and women graduates in the rate and levels of 2012 education debt.
- Premedical debt and non-education debt data have been very stable in recent years and the totals are small compared with total education debt.
- Grants and scholarships rarely cover the entire cost of attending medical school. Private schools typically offer more in grants and scholarships than public schools, although a wide variance exists among private schools in scholarship resources.
- Across all quintiles of self-reported family income, the median level of education debt varies only slightly, although the percent reporting indebtedness differs.
- Education debt differences related to race and ethnicity can be largely explained by the mix of public and private schools attended and variance in parental income between racial and ethnic groups.
- Education debt and/or potential income may play a role when physicians choose their specialties, but they do not seem to play a determining role for most. Non-financial factors such as personal interest in a specialty's content and/or level of patient care seem to have more influence in specialty choice.
- Several policy changes in recent years have affected the borrowing conditions for medical students.
- How the median debt level is repaid depends on physicians' length of residency and how they manage their debt during that time.

Introduction

According to estimates from the federal Consumer Financial Protection Bureau, outstanding student loan debt in the United States surpassed a trillion dollars early in 2012 and continues to grow at a steady pace.[1] Although the education debt of medical school graduates is but a fraction of this total, medical education debt and the cost of attending medical school continue to increase annually and are at record levels. These increases in medical school cost and medical student debt remain a concern in the medical education community and are the impetus for this update.

The medical school class of 2012 reported having at least $1.7 billion in education debt after earning their M.D. degrees.[2] Among 2012 graduates, 86 percent reported having education debt, with a median amount of $170,000. Education debt includes debt incurred during medical school plus any premedical/undergraduate education debt.

For most indebted graduates, medical school debt is the primary source of their education debt as the four year cost to attend can surpass $200,000 at most schools and can exceed $300,000 at nearly a dozen.

This report summarizes the state of education debt for medical school graduates and the attendance costs of medical schools, with a focus on 2012 data. It covers education debt differences by type of school attended, gender, race and ethnicity, premedical and non-education debt, grants and scholarship data, the influence of debt on specialty choice, and a variety of borrowing and repayment options.

The report is based primarily on data from two AAMC annual surveys. Education debt data is from the Graduation Questionnaire (GQ), sent to all graduating medical students, and the cost of attendance (COA) data is from the Tuition and Student Fees Survey (TSF), which is sent to all medical schools.[3] The GQ education debt data used has been cleaned to improve its quality. For maximum accessibility, most analyses are based on descriptive statistics and measures of change over time.

Type of School Attended Affects Debt

The difference between public and private schools can have a significant effect on the debt levels of medical school graduates. Graduates from private medical schools are slightly less likely to have debt, but if they do, their debt levels are typically higher than those of public medical school graduates (Table 1). For this reason, all comparisons in this report will account for public/private school differences.

1 See http://www.consumerfinance.gov/blog/too-big-to-fail-student-debt-hits-a-trillion/ for more details.
2 This figure is an estimate because of inconsistencies across surveys. Participating in the survey of graduating students is not mandatory whereas the survey of schools is mandatory but does not collect precise premedical debt totals or data on private loans taken out by students.
3 The 2012 GQ had 13,681 respondents representing 79 percent of medical school graduates. The 2012 TSF had a response rate of 100 percent.

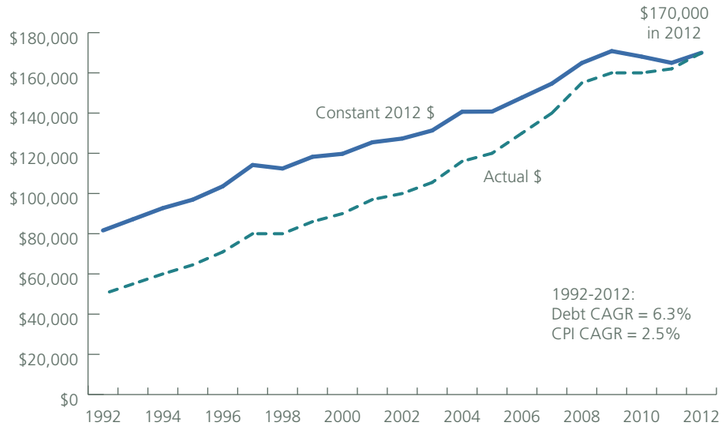
Physician Education Debt and the Cost to Attend Medical School, 2012 Update

Table 1: 2012 education debt at public and private medical schools

	Percent in GQ sample	Percent with education debt	Median education debt of indebted graduates
Public	59	88	$160,000
Private	41	84	$190,000
All	100	86	$170,000

Source: AAMC Graduation Questionnaire (GQ)

Figure 1: Median Education Debt of Indebted Medical School Graduates, 1992-2012



Source: AAMC Graduation Questionnaire (GQ). CAGR = compound annual growth rate. CPI = Consumer Price Index.

Debt Levels Are Rising

Debt levels for indebted medical school graduates have been rising faster than inflation over the last 20 years. On average, the median amount of education debt for graduates has increased 6.3 percent per year[4] since 1992 (Figure 1), compared with 2.5 percent for the Consumer Price Index (CPI). For the class of 1992, the median education debt was $50,000, which more than tripled to $170,000 for the class of 2012. Private medical schools have a higher level of education debt than public schools, but that debt has had a slower rate of growth over the last 20 years.

In recent years, the rate of increase in median debt levels has briefly slowed (Figure 1 and Table 2). The reasons for this slowdown are not completely understood, although interest rates may play a role. This slowdown may only be temporary as the increase in median debt for 2012 was 5 percent and recent trends in cost have not slowed.

4 As measured by the compound annual growth rate or average annual growth rate over the time period being analyzed, which is the geometric average of the annual growth rates during the time period.

Table 2: Median education debt at public and private medical schools and percent of graduates with education debt, selected years from 1992 to 2012

Year	Median education debt of indebted graduates	Percent change from prior year	Median education debt in 2012 dollars	Percent with education debt	Median education debt of indebted public graduates	Median education debt of indebted private graduates
1992	$50,000	2	$81,729	81	$45,000	$67,500
1996	$70,931	10	$103,676	83	$64,500	$91,013
2000	$90,000	5	$119,860	85	$81,000	$120,000
2004	$115,000	10	$139,615	82	$105,000	$140,000
2008	$155,000	11	$165,100	87	$145,000	$180,000
2009	$160,000	3	$171,034	87	$150,000	$177,500
2010	$160,000	0	$168,274	86	$150,000	$180,000
2011	$162,000	1	$165,164	86	$155,000	$180,000
2012	$170,000	5	$170,000	86	$160,000	$190,000
Compound annual growth rate from 1992 to 2012	6.3%				6.5%	5.3%

Source: AAMC Graduation Questionnaire (GQ)

Cost of Attendance Is Increasing

The most accurate way to measure the realistic cost that a medical student faces during their time in medical school is to look at their four-year cost of attendance (COA), which includes tuition, fees, and living expenses.[5] The four-year COA for each medical school can be calculated by adding COA data across four consecutive TSF surveys. For example, for the 2013 graduating class, the four-year COA would be the sum of the first-year cost from the 2010 TSF survey plus the second-year cost from the 2011 TSF survey plus the third-year cost from the 2012 TSF survey plus the fourth-year cost from the 2013 TSF survey. For the Class of 2013, the median in-state four-year COA across all schools rounds to $228,200.

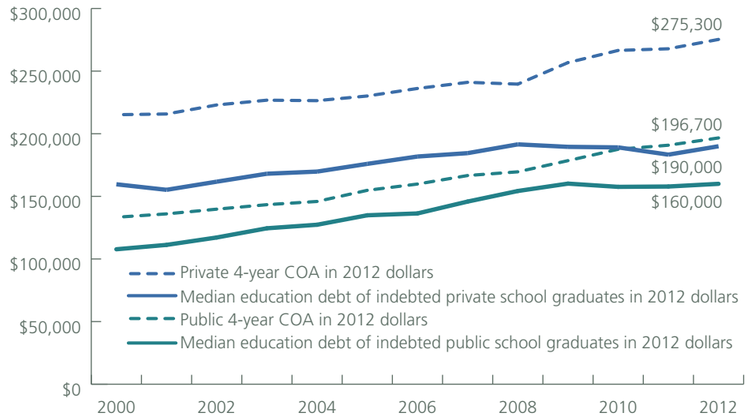
Figure 2 and Table 3 show how medical school costs have changed over the last 20 years. Due to survey limitations, COA data is only available from 1999.

As with debt, the cost of attending private medical schools is higher than that of public schools. But the annual growth rate of that cost has, on average, been slower at private schools since 2000. The average annual increase of the four-year COA for both public (5.8 percent) and private (4.5 percent) schools since 2000 has also outpaced inflation as measured by the Consumer Price Index, which has grown on average 2.4 percent annually during the same time period.

5 From 2010-2012, more than 90 percent of graduates reported earning an M.D. degree; the rest earned dual degrees. Of those earning an M.D., 87 percent graduated in four years.

Physician Education Debt and the Cost to Attend Medical School, 2012 Update

Figure 2: Median 4-year cost of attendance (COA) and education debt of indebted medical school graduates, 2000-2012 (In constant 2012 dollars)



Source: AAMC Graduation Questionnaire (GQ) and Tuition and Student Fees Survey (TSF).

Table 3: Median tuition and student fees (TSF), cost of attendance (COA), and four-year COA, public and private medical schools, for in-state students, selected years 1992 to 2012

	PUBLIC					PRIVATE				
Year	Number of schools	Median TSF for first-year class	Median COA for first-year class	Median 4-year COA	4-year COA percent change from prior year	Number of schools	Median TSF for first-year class	Median COA for first-year class	Median 4-year COA	4-year COA percent change from prior year
1992	68	$6,740	N/A	N/A		49	$18,365	N/A	N/A	
1996	73	$8,715	N/A	N/A		50	$23,662	N/A	N/A	
2000	73	$10,941	$26,054	$100,215	3%	50	$28,176	$43,018	$161,760	4%
2004	74	$16,945	$34,656	$120,332	4%	50	$34,969	$50,983	$186,703	2%
2008	74	$22,929	$42,290	$159,396	6%	51	$41,861	$58,958	$225,215	3%
2009	74	$24,838	$44,417	$167,192	5%	51	$43,474	$62,900	$240,511	7%
2010	77	$26,795	$48,000	$178,585	7%	52	$45,281	$64,893	$253,708	5%
2011	77	$28,214	$49,174	$187,393	5%	53	$46,339	$66,875	$263,008	4%
2012	79	$30,753	$51,300	$196,661	5%	54	$48,254	$69,857	$275,305	5%
CAGR 1992 to 2012		7.9%					4.9%			
CAGR 2000 to 2012			5.8%	5.8%				4.1%	4.5%	

Source: AAMC Tuition and Student Fees Survey (TSF). CAGR = compound annual growth rate. N/A = not available.

Debt Does Not Differ by Gender

There was virtually no difference in the rate and levels of education debt between men and women graduates in 2012 (Table 4). Gender does not appear to play a role in whether and how much medical school graduates borrow to attend medical school.

Table 4: Median education debt and percent with education debt for all 2012 medical graduates by gender

	Total percent of graduates in GQ sample	Graduates from public vs. private schools (%)	Graduates with education debt (%)	Median education debt of indebted graduates
Women	49	59-41	87	$168,000
Men	51	60-40	85	$170,000
All	100	59-41	86	$170,000

Source: AAMC Graduation Questionnaire (GQ)

Premedical and Non-Education Debt Not Major Factors

Premedical debt and non-education debt share two characteristics: the data in recent years are very stable and the totals are small compared with total education debt. More than a third of graduates reported premedical debt (education debt incurred before starting medical school) for each of the last five years (Table 5), with a median amount of about $20,000 every year. Between a quarter and a third of graduates report having non-education debt; the median amount has fluctuated around $10,000 in recent years. Non-education debt includes car loans, credit card debt, residency search loans, or other consumer debt; the question specifically excludes home mortgage debt.

Table 5: Premedical and non-education debt data for medical graduates, 2008-2012

	Graduates with premedical debt (%)	Indebted graduates' median premedical debt	Graduates with non-education debt (%)	Indebted graduates' median non-education debt
2008	38	$20,000	N/A	N/A
2009	38	$20,000	32	$10,000
2010	37	$20,000	26	$11,000
2011	35	$18,000	26	$9,150
2012	36	$20,000	25	$9,000

Source: AAMC Graduation Questionnaire (GQ). Non-education debt prior to 2009 collected in multiple categories. N/A = not available.

Physician Education Debt and the Cost to Attend Medical School, 2012 Update

Grants and Scholarships Rarely Cover Entire Cost

Grants and scholarships are available to medical students to help finance their medical education. However, there are very few "full-ride" scholarships available that would allow a student to graduate without any debt (Table 6). One exception is the relatively small number of M.D./Ph.D students who often receive full or substantial grants and scholarship funds for their extended course of study.[6] Another exception is the F. Edward Hébert School of Medicine of the Uniformed Services University of the Health Sciences, which provides a free medical education in exchange for a military service commitment after graduation.[7]

Resources for scholarships differ by institution type, with private schools far outpacing public schools. In fiscal year 2011, the 75 public medical schools reported a combined $1.3 billion in gifts and endowment revenue whereas the 51 private medical schools reported $2.6 billion, according to the annual data on medical school revenues.[8] In other words, although there are 50 percent more public medical schools than private, public schools report half the gifts and endowment funds compared with their private counterparts. Furthermore there is a wide variance among private schools in the size of their endowments.

Table 6: Scholarship data for 2012 medical graduates by type of school attended

School type	2012 graduates reporting scholarship funds (%)	Median 4-year scholarship amount among those reporting scholarship funds	Graduates with 4-year scholarship funds reporting at least $100,000 total (%)
All	62	$18,000	19
Public	63	$14,000	13
Private	61	$30,000	27

	Total 4-year scholarship amount reported	For those reporting scholarship funds, percent reporting this amount	Median 4-year scholarship amount among those reporting scholarship funds	Median education debt for indebted graduates by total 4-year scholarship amount reported
Public	None	N/A	N/A	$167,000
	Less than $100K	87	$11,000	$160,000
	$100K or more	13	$160,000	$70,000
Private	None	N/A	N/A	$200,000
	Less than $100K	73	$20,000	$205,750
	$100K or more	27	$180,000	$98,500

Source: AAMC Graduation Questionnaire (GQ). N/A = not applicable.

6 From 2010-2012, three to four percent of graduates reported earning an M.D./Ph.D. degree.
7 The school had 168 graduates in the class of 2011.
8 See *Table 2: Revenue Supporting Programs and Activities at 126 Fully Accredited U.S. Medical Schools Public vs. Private, FY2011,* available at https://www.aamc.org/download/285862/data/i.revenueofu.s.medicalscholsbysourcefiscalyear2011.pdf.

Education Debt Varies Little Across Family Income Levels

Not surprisingly, the education debt of medical school graduates varies by level of family income. Class of 2012 graduates from families in the highest income bracket report the lowest incidence of debt. However, more than four out of five graduates (81 percent) in this bracket still report having education debt and at levels similar to the national median ($166,000 versus $170,000 nationally).

Table 7 summarizes education debt by level of family income. It includes two data elements from the annual AAMC survey of matriculating students, which have been linked here to the survey of graduating students. First is the student self-reported data on "parents' combined gross income for last year" (68 percent of 2012 graduates reported a value). Second is the student's estimate of the percent of their medical education they will finance via "money from parents or family" (six other categories are also included for this question).

Self-reported family income data were grouped into quintiles by national census data from 2008 (because most medical students graduate in four years). This analysis finds that 78 percent of 2012 medical school graduates were in the top two quintiles of U.S. household income, a result similar to that in the January 2008 *AAMC Analysis in Brief*, which found that "more than three-quarters of medical students came from families in the top two quintiles of family income." [9]

Table 7: Education debt and other data by quintile of family income for 2012 medical graduates, quintiles based on U.S. census data

Quintile based on family income	1	2	3	4	5
Family income range of quintile	All above $100,241	$62,726-$100,240	$39,001-$62,725	$20,713-$39,000	$1-$20,712
Percent of GQ sample in quintile	50	28	12	5	4
Percent of quintile with education debt	81	92	94	95	95
Graduates from public vs. private schools (%)	54-46	62-38	64-36	61-39	61-39
Median education debt of indebted graduates in the quintile	$166,000	$173,000	$175,000	$169,500	$160,000
Percent of quintile reporting scholarship funds	53	70	75	83	83
Median self-reported parental income for all in the quintile	$200,000	$90,000	$50,000	$30,000	$14,000
Average for percent of medical education to be financed via "money from parents or family"	24	10	6	3	4

Source: AAMC Graduation Questionnaire (GQ) and Matriculating Student Questionnaire (MSQ). Family income quintiles based on U.S. census data.

9 See "Diversity of U.S. Medical Students by Parental Income," by Paul Jolly, *AAMC Analysis in Brief, January 2008.* Available at https://www.aamc.org/download/102338/data/aibvol8no1.pdf.

Physician Education Debt and the Cost to Attend Medical School, 2012 Update

In general, as medical school graduates' family income increases, the likelihood of reporting receipt of scholarship funds decreases, and the expected percentage of "money from parents or family" to finance one's medical education increases (Table 7). Graduates in the top quintile attend private schools at the highest rate. Interestingly, across all quintiles, the median level of education debt varies only slightly, although the percent reporting indebtedness differs.

Education Debt and Race and Ethnicity

Among medical graduates, differences in race and ethnicity are associated with differences in education debt. Though some might attribute this solely to differences in family income, Table 8 shows that graduates' choice of public versus private schools also accounts for education debt differences among racial and ethnic groups. To the best of our knowledge, this is the first time the influence of school type on the education debt levels of various racial and ethnic groups has been identified.

Table 8: Education debt data for 2012 medical school graduates by racial and ethnic group

	Graduates with education debt (%)	Graduates from public vs. private schools (%)	Median education debt of indebted graduates	Median parental income (Self-reported)	Average for percent of medical education to be financed via loans (Self-reported)	Average for percent of medical education to be financed via family (Self-reported)	Note on respondents included in each group
All	86	59-41	$170,000	$100,000	70	10	All respondents
Black/African American, not Hispanic	94	47-53	$184,125	$69,000	62	3	Those selecting "Black/African American" only
White, Not Hispanic	86	63-37	$172,500	$115,000	72	9	Those selecting "White" only
Mexican American	92	63-37	$170,000	$75,000	65	5	Those selecting "Mexican, Mexican American, Chicano/Chicana" only
Asian, not Hispanic	81	54-46	$151,078	$100,000	66	16	Those selecting any "Asian" group including Asian Indian, Pakistani, Chinese, Korean, Japanese, Filipino, Vietnamese, or Other Asian
Puerto Rican (Commonwealth)	90	45-55	$120,000	$60,000	71	13	Those selecting "Puerto Rican" who live in the Commonwealth in any combination of race and ethnicity
All others	87	55-45	$170,000	$100,000	66	9	All minus those in the other categories of this table, mainly those selecting multiple combinations of race and ethnicity

Source: AAMC Graduation Questionnaire (GQ) and Matriculating Student Questionnaire (MSQ).

The AAMC collects race and ethnicity data separately and allows respondents to choose multiple categories for each if they wish. The data in Table 8 is not intended as a comprehensive examination of the interaction between race, ethnicity, and education debt, which is an important topic beyond the scope of this report. Rather, it is presented as a snapshot of 2012 data that highlight points of interest worthy of more detailed study.

Compared with all medical school graduates of 2012, black/African American graduates were more likely to report having education debt and reported a higher median education debt amount. This is primarily because they were also more likely to attend private medical schools, which typically have higher debt levels than public schools. Additionally, as Table 8 shows, black/African American graduates, among all groups in the table, report the second lowest level of parental income and the lowest average for percent of medical education to be financed via family.

Compared with all medical school graduates of 2012, Mexican American medical school graduates were more likely to report having education debt and were more likely to attend public schools. However, they reported a median education debt amount the same as that for all medical school graduates. Nearly a quarter of all 2012 Mexican American graduates attended one of the public University of Texas medical schools. More than half of all 2012 Mexican American graduates attended a school in one of the four states that borders Mexico (California, Arizona, New Mexico, and Texas), and only 4 of the 17 medical schools in these states are private.

Compared with all medical school graduates of 2012, Asian graduates were less likely to report having education debt. Asian graduates were more likely to attend private medical schools. Private medical school graduates typically have higher levels of debt yet Asian graduates reported lower levels of median education debt. These conflicting data defy an easy explanation. Some speculate that a cultural influence encourages Asian families to financially support the education of family members, and the data from the matriculating survey provides some support to this hypothesis (Table 8). But further study is needed before any conclusions can be reached.

Compared with all medical school graduates of 2012, graduates identifying with the Commonwealth of Puerto Rico were more likely to report having education debt, more likely to attend a private medical school, and reported a much lower level of median education debt. These results are entirely explained by the medical schools attended. Ninety-two percent of these 2012 graduates attended one of the four Puerto Rican medical schools, of which three are private and all have a four-year COA well below the median. Furthermore, using 2012 data, over 42 percent of Commonwealth of Puerto Rico graduates attended the public University of Puerto Rico School of Medicine, which had the lowest four-year COA among the 125 medical schools with complete data, and not surprisingly, had among the lowest median level of education debt for indebted graduates.

Physician Education Debt and the Cost to Attend Medical School, 2012 Update

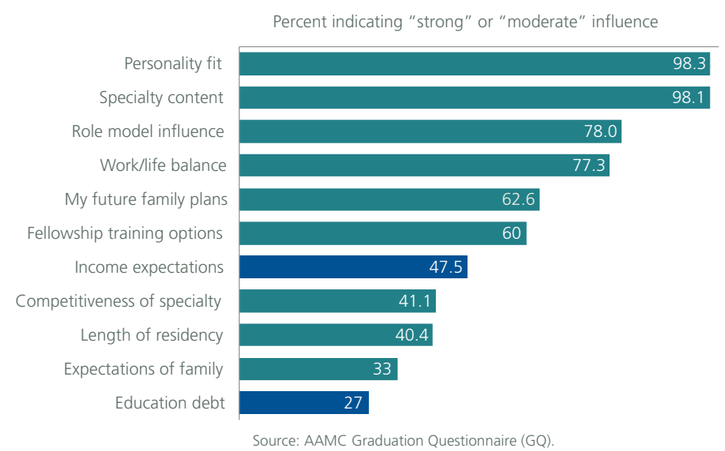
The Minor Role of Debt in Specialty Choice

Many claim few physicians choose primary care because of prohibitive debt levels, but surprisingly little evidence supports this assertion. In fact, a thorough review of the academic literature shows little to no connection between economic factors such as debt/income potential and specialty choice.[10]

Rather, studies show specialty choice is a complex and personal decision involving many factors. Education debt and/or potential income may play a role when some physicians choose their specialties, but they do not appear to play a determining role for most.

Graduates rate the importance of various factors in their specialty choice decision in the annual survey of graduating medical students (GQ). Figure 3 shows the most important factors are a student's personal interest in a specialty's content and/or level of patient care, desire for the "controllable lifestyle" offered by some specialties, and the influence of a role model in a specialty. Another central factor is the applicants' academic qualifications and the competitiveness of the residency program to which

Figure 3: Influence of various factors on the specialty choice of 2012 graduating medical students



Source: AAMC Graduation Questionnaire (GQ).

10 See Kahn, M.J., Markert, R.J., Lopez, F.A., Specter, S., Randall, H., and Krane, N.K., "Is Medical Student Choice of a Primary Care Residency Influenced by Debt?," *Medscape General Medicine,* October 2006, available at http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1868367. Also Frank, E., Feinglass, S., "Student loan debt does not predict female physicians' choice of primary care specialty," *Journal of General Internal Medicine,* 1999, 14(6): 347-350, available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1496591/. Also McDonald, F.S., West, C.P., Popkave, C., and Kolars, J.C., "Educational debt and reported career plans among internal medicine residents," *Annals of Internal Medicine* 149 no. 6 (2008): 416-420, available at http://annals.org/article.aspx?articleid=742834.

they apply.[11] Figure 3 clearly indicates the relative importance of economic factors, which consistently rank toward the bottom of the list for this question every year.

Further analysis of the GQ data shows that 2012 medical school graduates' choice of specialty can be compared by debt level. We grouped all graduates who were "moderately" or "very" confident in their specialty choice (nearly 75 percent of the sample) into five subgroups by starting salary first year after residency (using 2011 salary data): those around $200K, those between $220K and $260K, and those of $300K or more, along with those interested in family medicine ($160K) and in pediatrics ($145K).[12] Graduates interested in internal medicine were excluded as data indicate that 58 percent of those who start a categorical internal medicine residency will go on to subspecialize and are thus unlikely to eventually practice general internal medicine.[13]

Table 9 lists the results of a crosstab of these selected specialties by debt level in which the debt data have been separated into thirds. Each row shows the column percent and the median debt level for respondents in each cell.

It is hard to see any systematic bias away from primary care specialties for graduates with higher debt levels. Rather, these data indicate that the percent of graduates with an interest in each specialty group and their median levels of education debt appear to be quite similar across debt levels.

For a different perspective on this topic, see our article on the actual economics of physician education debt repayment in the January 2013 issue of *Academic Medicine*.[14] The study uses financial planning software to model realistic household finance data, demonstrating that recent medical school graduates with the median amount of education debt ($160K-$170K) can enter primary care, raise a family, live in an expensive urban area, and repay their debt within 10 years without incurring additional debt. However, heavily indebted primary care graduates (who owe $250K+) must plan repayment and lifestyle choices carefully and strategically. The article includes several detailed tables that outline the economics of education debt repayment across a variety of scenarios and specialties. It suggests that education debt need not play a determining role in specialty choice and illustrates the capacity of physicians to repay their education debt.

11 See "Predicting Match Success" section, *Charting Outcomes in the Match,* by National Resident Matching Program and the AAMC, August 2007, available at http://www.nrmp.org/data/chartingoutcomes2007.pdf.

12 Three specialties are in the "around $200K" group: psychiatry ($198K), neurology ($200K), and physical medicine and rehabilitation ($210K). Four specialties are in the "between $220K and $260K" group: obstetrics and gynecology ($223K), emergency medicine ($245K), anesthesiology ($250K), and general surgery ($260K). Four specialties are in the "$300K or more" group: urology ($295K), dermatology ($313K), diagnostic radiology ($325K), and orthopedic surgery ($413K). All data are from the *MGMA Physician Placement Starting Salary Survey, 2012 Report Based on 2011 Data.*

13 Per recent analysis by the AAMC's Paul Jolly of Graduate Medical Education (GME) data.

14 See Youngclaus, J., Koehler, P., Kotlikoff, L. and Wiecha, J., "Can Medical Students Afford to Choose Primary Care? An Economic Analysis of Physician Education Debt Repayment," *Academic Medicine,* Vol. 88, No. 1/January 2013, available at http://journals.lww.com/academicmedicine/Fulltext/2013/01000/Can_Medical_Students_Afford_to_Choose_Primary.15.aspx

Physician Education Debt and the Cost to Attend Medical School, 2012 Update

Table 9: Crosstab of selected specialties by debt level for 2012 GQ respondents with debt who are "moderately" or "very" confident in their specialty choice (N = 5,765)

Interest in Specialty with	Ed Debt <$130K		Ed Debt Between $130K and $219K		Ed Debt >=$220K	
	Percent of this debt category	Median Education Debt	Percent of this debt category	Median Education Debt	Percent of this debt category	Median Education Debt
Starting Salary of $300K+	24%	$61K	22%	$170K	22%	$260K
Starting Salary between $220K and $260K	40%	$75K	44%	$177K	46%	$260K
Starting Salary around $200K	12%	$75K	11%	$175K	11%	$257K
Family Medicine Starting Salary=$160K	8%	$80.5K	10%	$175K	9%	$256K
Pediatrics Starting Salary=$145K	16%	$70K	13%	$172K	11%	$255K
Totals	100%	$72K	100%	$175K	100%	$260K

Source: AAMC Graduation Questionnaire (GQ)

Factors Influencing Borrowing and Repayment

A number of financial factors have shaped the medical education debt landscape in the past decade. In 2006, the variable interest rate on federal Stafford Loans was replaced with a 6.8 percent fixed rate, and starting in 2012 graduate/professional students lost the subsidy on these loans. This subsidy loss alone will increase repayment by $10,000-$20,000, depending on the repayment plan selected, for medical graduates with the median debt amount.

Limits on the federal Stafford Loan have also changed. The annual limit for graduate/professional students increased by $2,000 in 2006 and the aggregate limit for health professions students was increased by $35,000 two years later.

Though graduates have more repayment options than ever, many choose to make no payments during residency. In the past, most were able to use this option and maintain the subsidy on their Stafford L oan for up to three years through the Economic Hardship Deferment (EHD). The pathway through which residents qualified for EHD was eliminated in 2007. Now, residents opting out of payments

during residency typically choose forbearance. This repayment status allows graduates to postpone payments, but interest on their debt will accrue. There are no subsidies on federal student loans during forbearance, so the overall interest accruing over the life of the loan increases.

Other than higher cost, borrowers face additional challenges navigating the increasingly murky waters of repayment. In 2010, federal student loans could no longer be originated by private lenders. Now, all new federal student loans are made directly through the Department of Education's Direct Loan program. This transition is still a work in progress and, in some cases, may make the repayment process more confusing and time-consuming.[15]

Repayment Scenarios

What does repayment of the median education debt amount look like?

This simple question has a variety of answers, depending on how long physicians spend in specialty training and how they choose to manage their loans during and after training.

Table 10: Various repayment scenarios for a 2012 medical graduate with $170,000 in federal Direct Loans

Description	Repayment Years	Monthly Payment	Interest Cost	Total Repayment
Pay As You Earn for full repayment with $170,000 starting salary after residency	Residency: 3	$275 to $325	$192,000	$362,000
	Post-residency: 17	$1,400 to $2,200		
IBR for full repayment with $170,000 starting salary after residency	Residency: 3	$410 to $490	$150,000	$320,000
	Post-residency: 12	$2,100 to $2,200		
Forbearance during residency, then extended repayment	Residency: 3	$0	$306,000	$476,000
	Post-residency: 25	$1,600		
Forbearance during residency, then standard repayment	Residency: 7	$0	$219,000	$389,000
	Post-residency: 10	$3,200		
Forbearance during residency, then extended repayment with 2 year NHSC ($60K)	Residency: 3	$0	$91,000	$261,000
	Post-residency: 14	$1,600		
Public Service Loan Forgiveness with Pay As You Earn and $135,000 starting salary after residency	Residency: 3	$275 to $325	$102,000	$111,000 then $209,000 forgiven
	Post-residency: 7	$1,100 to $1,300		
Public Service Loan Forgiveness with IBR and $135,000 starting salary after residency	Residency: 3	$410 to $490	$95,000	$163,000 then $145,000 forgiven
	Post-residency: 7	$1,400 to $1,900		

Source: Authors' analysis of loan portfolio of median indebted medical school graduate.

Notes: IBR is Income-Based Repayment. NHSC is National Health Service Corps Loan Repayment Program. All figures are approximate and rounded for clarity. Salaries are in 2011 dollars. Custom repayment scenarios can be analyzed by physician borrowers using the Medloans® Organizer and Calculator available at aamc.org/FIRST.

15 See Nelson, L.,"No way out of default," *Inside Higher Ed,* April 18, 2012, available at http://www.insidehighered.com/news/2012/04/18/problems-plague-education-department-debt-management-process.

Physician Education Debt and the Cost to Attend Medical School, 2012 Update

Table 10 lists several repayment scenarios for a physician who borrowed $170,000 for a medical education. Most of these scenarios are for a three-year residency, which is most typical of a primary care specialty; one scenario has a seven-year residency. At this level of borrowing, the balance at repayment after the six-month grace period following graduation would be nearly $195,000.

During residency, physician borrowers have two options: to pay or to postpone payment. Opting to postpone is usually via forbearance which results in interest accruing and capitalizing at the end of residency. At this level of borrowing, the monthly interest during residency would be more than $1,100, which may make forbearance seem a suboptimal choice. Yet it could make sense for some borrowers pursuing a higher paying specialty as it gives them financial flexibility during residency when income levels are dramatically lower. After a three-year residency, the median borrower would have a repayment balance of nearly $230,000 if they chose forbearance.

Under current guidelines, physician borrowers opting to make payments during residency are most likely to choose Income-Based Repayment (IBR) or Pay as You Earn, depending on their eligibility. Both offer the lowest monthly payment because they link payment to the borrower's income and not their debt level, via a formula based on federal poverty guidelines. A typical first-year resident's salary of roughly $50,000 would result in a monthly payment of $410 (IBR) or $275 (Pay as You Earn) which would gradually increase each year of residency. Though these payments would not cover the monthly interest for median debt level borrowers, choosing either option would allow residents to keep their monthly loan payment tied to their income after residency, which could be a benefit to those practicing primary care.

Regardless of their repayment choice during residency, physician borrowers have several options after residency. The Standard plan involves payment for 10 years (if forbearance was chosen during residency, fewer if IBR or Pay as You Earn were chosen); in general it results in the highest monthly payment and lowest total interest paid. The Extended plan allows borrowers to make payments for up to 25 years (if forbearance was chosen during residency, fewer if IBR or Pay as You Earn were chosen); in general it results in a lower monthly payment but more total interest paid.

Primary care physicians committed to serving in a health professional shortage area might consider the National Health Service Corps (NHSC) loan repayment program, which can pay off up to $60,000 in education debt for a two-year, full-time commitment. Borrowers applying this lump sum immediately to their loans' outstanding principal could dramatically reduce their repayment years (by nearly 11 years) and total interest paid (by roughly $215K) compared with opting for forbearance during residency, then the Extended repayment plan (Table 10). Additional years of service are possible that would allow some physicians to have the vast majority of their education debt repaid by NHSC funds.

Another repayment option of interest to physician borrowers, particularly those in primary care, is the federal Public Service Loan Forgiveness (PSLF) program. This program "forgives" or cancels any balance that remains after a borrower makes 10 years worth of loan payments while employed with a non-profit employer or working in government service. A physician's time during residency could count toward the 10 years of payments and employment in academic medicine after residency would likely count also, provided the physician was paid by a nonprofit entity.

Median borrowers pursing PSLF and choosing Pay As You Earn during and after residency would repay $111K during their 10-year repayment schedule and would have $209K forgiven; those choosing IBR during and after residency would repay $163K and have $145K forgiven (Table 10).

There is an opportunity cost to PSLF in that it requires nonprofit employment where the income potential for a physician would likely be lower than if they were in private practice. Thus, the short-term financial gain afforded by the program's loan forgiveness potential could be outstripped by the long-term financial advantages of having a higher annual salary each year.

There are numerous loan repayment/forgiveness options other than NHSC and PSLF, including military programs, a National Institutes of Health program for researchers, an Indian Health Service program for those seeking to serve American Indian/Alaska Native populations, and a variety of targeted state programs.[16]

Final Note

Few developments in the last 20 years have had potential to alter the trends of increasing medical school cost and medical student debt documented in this report. While education debt amounts change, certain themes consistently emerge every time this topic is analyzed: though the future is uncertain and cost and debt continually increase, physicians are able to repay current debt levels.

Current uncertainties include physician compensation which could be affected, positively or negatively, by the projected physician shortage, the full enactment of the Patient Protection and Affordable Care Act, and potential changes in the delivery of health care. These developments may even alter medical education itself. Though some of these uncertainties will be resolved, others will undoubtedly emerge, affirming the need to reexamine the state of medical education debt in the future.

16 See aamc.org/stloan for a thorough listing of such programs.

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