

Graduation Rates and Attrition Factors for U.S. Medical School Students

Reported graduation rates for medical students historically have been very high with an ultimate graduation rate of 96 percent throughout the 1990s. Only about 81 percent of medical students graduated from medical school in four years, however.¹ Importantly, these numbers reflect the graduation rates of all students, including those who obtained more than one degree during their time in medical school. This *Analysis in Brief* presents current data on graduation rates for U.S. medical students, taking into account specific types of degree program (i.e., single- and multiple-degree programs). In addition, the growth in the number and rate of student participation in non-joint degree research and taking a leave of absence from medical schools is examined, evaluating these factors in terms of risk of attrition from M.D.-only programs. Finally, the growth in participation in multiple degree programs is highlighted. This understanding of the factors that affect time to graduation can facilitate schools' evaluation of student's progress and advise a student during their academic career.

Methods

The data for this analysis come from the AAMC Student Records System (SRS), a database that houses information on the U.S. medical school student population

and tracks students from enrollment through graduation. The data in SRS are supplied, in part, from the student application process. Data are updated regularly by medical school registrars as a student progresses through medical school. In addition to matriculation and graduation dates, the SRS includes information on degree program types in which the student is enrolled. Prior to 2002–2003, data were included on participation in M.D.-only and M.D.-Ph.D. programs. Beginning in 2002–2003, participation in other dual degree programs (e.g., M.D.-M.B.A., M.D.-M.P.H.), were included. SRS also includes a student's change of status during medical school.

In this analysis, the number of students in multiple degree programs was examined for each matriculating class cohort. The graduation rates and time to graduation of U.S. M.D.-only (single degree) and multiple-degree medical students were reviewed. Examining the U.S. M.D.-only cohort, time to graduation, and likelihood of graduating were analyzed based on the reason for their extra year(s) as entered into the SRS by their medical school (e.g., academic leave of absence, health leave of absence, research year). Four- and five-year graduation rates for M.D.-only students are shown because the majority

of M.D.-only students graduate in either four or five years. Eight-year graduation rates are a proxy for whether the student ever graduates, as less than 0.1 percent of M.D.-only students graduate after more than eight years. For M.D.-Ph.D. programs, the 10-year graduation rate is included. Less than 0.1 percent of M.D.-Ph.D. students graduate after more than 10 years. Transfer students and students with advanced standing were excluded from these analyses.

Results

The four-year graduation rates for M.D.-only students fell from 90 percent in late 1970 to around 83 percent in the 1980s, where it has remained (Table 1). For the most recent class (2009–2010 matriculants), 81 percent² of the M.D.-only students had graduated by the spring of 2013, reflecting the lowest four-year graduation rate of any class to date. The five-year graduation rate has fallen less dramatically from 97 to 94 percent, and the eight-year graduation rate from 98 to about 97 percent.

Further analysis shows that the eight-year graduation rates for M.D.-only medical students vary across students with different experiences during medical school (Table 2). Students who take time off for non-joint degree research had an eight-year graduation

Table 1: Four-, Five-, and Eight-year Graduation Rates for U.S. Medical School M.D.-Only Students by Matriculation Years

	Matriculation Year Ranges						
	1975-1976 to 1979-1980***	1980-1981 to 1984-1985	1985-1986 to 1989-1990	1990-1991 to 1994-1995	1995-1996 to 1999-2000	2000-2001 to 2004-2005	2005-2006 to 2009-2010
N	75,180	80,218	76,845	76,699	75,859	75,559	80,920
4-year graduation rate	90.1	86.4	82.2	83.4	83.4	83.4	82.5
5-year graduation rate	96.6	94.5	92.8	93.6	94.1	94.3	94.1*
8-year graduation rate	97.7	96.1	95.4	96.2	96.3	96.6	96.6**

*includes only those classes that matriculated at least five years prior to 2013

** includes only those classes that matriculated at least eight years prior to 2013

***each column includes graduation rates aggregated across five matriculating classes.

1 Garrison G, Mikesell C, Matthew D. (2007). Medical School Graduation and Attrition Rates.

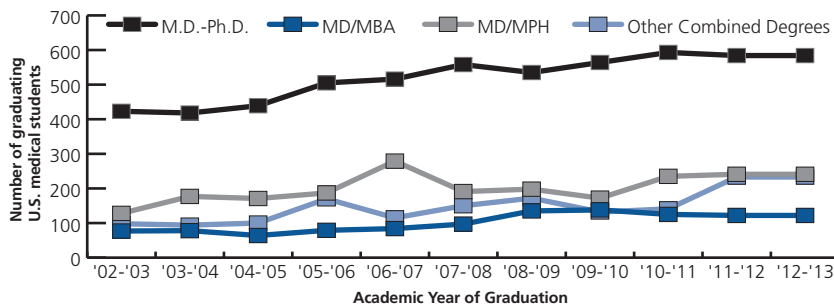
2 Other published reports reference an 86 percent four-year graduation rate (Using MCAT Data in Medical Student Selection. Washington DC:AAMC, 2010), but that calculation does not include M.D.-only students who take time off for non-degree research, as this analysis does.

Table 2: Four-, Five-, and Eight-year Graduation Rates for U.S. Medical School M.D.-only Students Who Took Non-joint Degree Research or Leave of Absence

	Matriculation Year Ranges					
	1995-1996 to 1999-2000		2000-2001 to 2004-2005		2005-2006 to 2009-2010	
	Non-joint degree research	LOA	Non-joint degree research	LOA	Non-joint degree research	LOA
N	1009	4632	1773	4534	2698	5384
4-year graduation rate	0.8	6.4	0.3	7.0	0.4	7.7
5-year graduation rate	82.7	49.0	85.2	52.6	85.6*	51.5*
8-year graduation rate	96.9	67.2	96.6	70.4	97.1**	69.0**

*includes only those classes that matriculated at least five years prior to 2013 ** includes only those classes that matriculated at least eight years prior to 2013
 ***each column includes graduation rates aggregated across five matriculating classes

Figure 1: Numbers of U.S. Medical School Graduates from Combined Degree Programs, from 2002–2003 through 2012–2013*



* The number of graduates from multiple degree programs other than M.D.-Ph.D. were first reliably captured in SRS in 2002-2003

rate about 97 percent for all classes. In contrast, medical students who took a leave of absence (LOA) for any reason (i.e., academic, health, or other) have, on average, an eight-year graduation rate ranging from 62 to 72 percent.

The number of students taking a leave of absence has remained in the range of six to seven percent through the years. Participation in non-joint degree research has more than doubled in the past 15 years, and in the most recent time period included more than three percent of the students.

The students enrolled in programs leading to multiple degrees are expected to take more time to graduation. The eight-year graduation rate for M.D.-Ph.D. students has been below 70 percent for the past 14 years (ranging from 62–70 percent). The 10-year graduation rate, however, has ranged from 90–95 percent. Because participation in other combined degree programs has only been included reliably in SRS since the 2002–2003 matriculating class, only data from those classes were examined. In those years, the five-year graduation rate for students in combined degree programs other than M.D.-Ph.D. was 86 percent; the eight-year graduation rate was 98 percent.

An analysis of the number of U.S. medical school students enrolled in programs leading to multiple degrees (i.e., M.D. combined with another graduate degree) reflects steady growth in the number M.D.-Ph.D. students over the past two decades (Figure 1). From 1993 to 2013, the number of entering medical students increased by 17 percent, while the number of students enrolled in M.D.-Ph.D. programs increased by more than 100 percent. Although the M.D.-Ph.D. remains the largest of the combined degree programs, the total number of students graduating with other dual degrees (N=596) exceeded the number of M.D.-Ph.D. graduates (N=584) for the first time in 2012–2013.

Discussion

While the ultimate graduation rate for M.D.-only medical students remains very high, there is a clear trend over the past 30 years showing a drop in the four-year graduation rate for single degree medical students. Further research should examine the extent to which this trend reflects a perceived need for additional experiences for career success or competitiveness in the residency matching process or, alternatively, a generational shift in the view of the educational timeline.

This analysis also highlights the continued increase in medical school graduates who are acquiring more than one degree. While these students use additional years to complete a multiple-degree program, their ultimate graduation rate is very high. Similarly, these findings show that taking time out of a M.D.-only degree program for research that does not lead to a second degree (the designation “Special Studies/Research”) does not have an impact on ultimate graduation rates. Any concerns that these non-degree research years are likely to derail medical students’ progress to graduation should be assuaged by these data. Rather, the value of the research experience for an individual student may be evaluated based on the student’s interests, opportunities, and career goals.

In contrast, students who take a leave of absence are at significantly higher risk of not completing medical school. The finding that taking a leave of absence for any reason places a medical student into a category with a one-in-three chance of not graduating may be intuitively obvious, but this has not been documented previously. These results all contribute to a more nuanced understanding of the factors that affect time to graduation, so that individual schools can be better informed as they evaluate a student’s progress and advise a student during their academic career.

Authors:

Marie Caulfield, Ph.D., Manager, Data Operations and Services, mcaulfield@aamc.org
 Geoffrey Redden, Consultant, Deloitte (at time of writing: Senior Database Specialist, AAMC)
 Henry Sondheimer, M.D., Senior Director, Medical Education Projects, hsondheimer@aamc.org

Association of American Medical Colleges

655 K St., NW, Suite 100
 Washington, D.C. 20001-2399
analysis@aamc.org
www.aamc.org/data/aib