

How Long Does it Take to Proceed from an MD Degree to a Medical School Faculty Appointment?

Faculty in academic medicine serve a critical role in the nation's health systems. They are uniquely responsible for training future physicians, performing a large share of the biomedical research conducted in the U.S., and undertaking much of the nation's clinical care. Because of these faculty contributions, many medical schools consider training future faculty as part of their mission.

In order to evaluate performance relative to this mission, medical schools may benefit from understanding the range of years from the time a person obtains a U.S. medical school degree until the time that person begins a first appointment as a full-time faculty member. This *Analysis in Brief* (AIB) examines how this range varies relative to types of career aspirations that medical school graduates declare upon graduation, and how this "time to a faculty post" changes across cohorts.

Methodology

Data came from three AAMC sources: the Student Records System (SRS),¹ the Medical School Graduation Questionnaire (GQ),² and the Faculty Roster.³ The study sample includes MD degree recipients from U.S. LCME-accredited medical schools who are recorded in the SRS as having graduated sometime between the 1979–80 and the 2003–04 academic years. Graduates in this sample were asked to indicate their career intention on the GQ; for this study, responses were collapsed into three

categories: faculty member, clinician, and other.⁴ Respondents who declared a preference for a faculty position were aggregated into five-year cohorts based on the academic year of graduation: academic years 1979–80 through 1983–84 ("early '80s academic years"); academic years 1989–90 through 1993–94 ("early '90s academic years"); and academic years 1999–00 through 2003–04 ("early millennial academic years").

Individuals from the study sample were matched to the Faculty Roster dataset. The academic year in which a person began his or her first full-time rank faculty appointment (assistant, associate, or full professor) was determined. Graduates who had not obtained a full-time faculty position by the date of the analysis (August 2014) were not recorded as becoming a faculty member. The cumulative proportion of a group that became full-time faculty as a function of years since graduation is presented.

Results

The population of MD-degree recipients who received their award between the 1979–80 academic year and the 2003–04 academic year numbered 394,066. However, this study is limited to 301,769 of these graduates (76.6 percent) who also responded to the GQ.⁵ While response rates to the GQ varied by academic year, the dependent variable in this study, time until faculty appointment is not related to whether or not an individual responded to the GQ.⁶

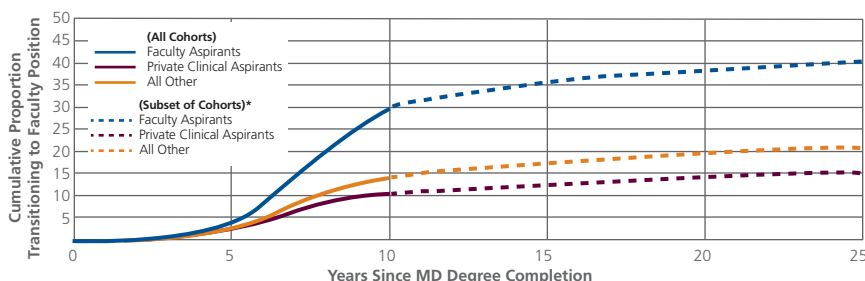
Results suggest that aspirations do matter. Graduates who declared aspirations to become full-time faculty did so in far greater proportions than those who declared other aspirations or were undecided (Figure, Top Panel). Results show that those who did not declare a preference for a full-time faculty career in their graduating year of medical school were very unlikely to ever become full-time faculty (less than 20 percent of those individuals became full-time faculty members). Those who did declare a preference for a full-time faculty position also were relatively unlikely to have ever achieved that goal, but the proportion was higher. By 15 years after receiving an MD degree, 36 percent of those who declared a preference for a full-time faculty position had become full-time faculty at a medical school. Regardless of career aspiration, yearly increases in the proportion of individuals who become full-time faculty members notably slowed after 11 years. This deceleration continued thereafter in each successive year out from receipt of the degree. By 15 years after the degree, increases to the cumulative proportion who become faculty are marginal (i.e., less than 1 percent increase per year).

Among those graduates with full-time faculty career aspirations, the pattern of transitioning into full-time faculty positions varied across cohorts (Figure, Bottom Panel). Notably, for cohorts that received degrees in the early millennial period, the cumulative

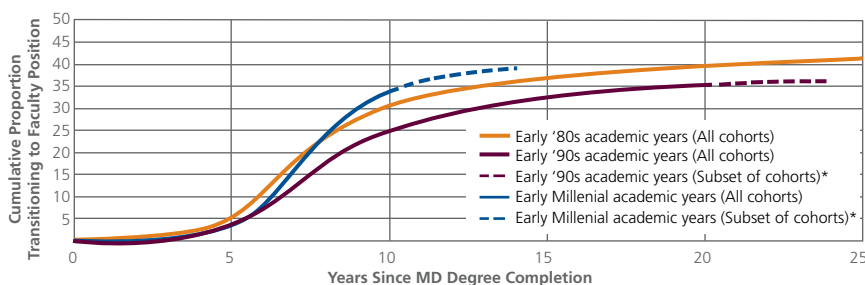
1. The AAMC Student Records System houses enrollment information on the national medical student population and tracks student progress from matriculation through graduation. For more information, visit <https://www.aamc.org/services/srs/>.
2. The AAMC Graduation Questionnaire gathers information from graduating medical students on their experiences at the school. For more information, visit <https://www.aamc.org/data/gq/>.
3. The AAMC Faculty Roster is a national database that tracks characteristics of virtually all full-time U.S. medical school faculty at all LCME-accredited institutions. For more information, visit <https://www.aamc.org/data/facultyroster/>.
4. See Supplemental Material for the table that lists how response options were collapsed.
5. MD-degree recipients whose GQ-response year occurs after the academic year of graduation are excluded from analysis (n=86) as are MD-degree recipients whose GQ-response year occurs more than one year prior to the academic year of graduation (n=198).
6. See Supplemental Material for discussion of the sample response rate and presentation of evidence over no association between faculty outcomes and GQ response.

Figure: Proportion Transitioning from Medical School to Full-Time Faculty as a Function of Time: MD Degree Recipients who Responded to the GQ

**Top Panel:
By Career Aspiration: Graduating Cohorts from 1979–80 to 2003–04 (n=301,769)**



**Bottom Panel:
MD Degree Recipients with Faculty Career Aspirations by Select Aggregated Five-Year Cohort (n=48,938)**



* Each cohort is observed until June 30, 2014. As a result, the earlier cohorts within a group could be observed for more years than the later cohorts within the group. For example, the 1999–00 cohort was observed for 14 years, but the 2003–04 cohort could only be observed for 10 years. The dashed portion of the line displays data for only those cohorts in the group that could be observed in a given year.

proportion of individuals transitioning to faculty positions spiked between the sixth and the tenth year out from receiving their MD degrees. For earlier cohorts, the rise in the proportion of individuals transitioning to faculty positions during this period was not as sharp. By 10 years after receiving the degree, nearly 35 percent of the early millennial graduates with faculty aspirations had become faculty members, compared to approximately 30 percent for graduates in the early 1980s and 25 percent for graduates in the early 1990s. This difference over time is even more pronounced when comparing all graduates within these cohorts, and not only those with faculty aspirations (see supplemental material). However, despite the higher rate of transition to faculty positions for the early millennial cohorts,

the growth in the cumulative probability of transitioning to faculty positions slows around 11 to 15 years after receiving the MD degree, a time point similar to the slowdown experienced by the other cohorts.⁷

Discussion

Most MD-degree recipients, including those with professed intentions of becoming faculty, do not become full-time faculty members. This finding may have implications for mentoring and providing support for students interested in academic careers. The majority of U.S. medical school graduates who do eventually go on to become full-time faculty do so between their 5th and 10th year after completing their MD degree. After 15 years since earning an MD, few transition to faculty for the first time.

These results should be useful to those who are interested in modeling factors that are associated with becoming a faculty member. Such work could include modeling effects of demographic status (like gender and race)⁸ or undergraduate medical school factors (such as mission). These results also should help evaluate efforts to promote attainment of faculty posts. Such evaluations require baseline knowledge about normal times to transition from MD-degree earning to first full-time faculty posts. The data suggest that 10 years is a sufficient span of time to observe graduating cohorts in order to capture most entrances into full-time faculty posts, and 15 years is a sufficient time span to observe almost all entrances into full-time faculty posts.

One limitation of this analysis is that results are not broken out by specialty and department. Given that the length of residency varies systematically by specialty, rates of becoming a faculty member certainly will vary by specialty. Another limitation is that the comparisons over time do not take into account dual-degree holders. For example, are there cohort differences in the percentage of MD/PhD graduates becoming faculty members? Future research can explore these issues. This current work sets important baseline information and may inform future research that examines how timing of transitions to faculty appointment is related to faculty career outcomes like satisfaction, promotion, or attrition.

Authors

Emory Morrison, PhD, Director of Policy Research Studies, emorrison@aamc.org

Christine Liu, PhD, Senior Research Analyst, cliu@aamc.org

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Association of American Medical Colleges

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

7. See Supplemental Material for Figure C, Table C, and discussion that provides a more detailed analysis.

8. e.g., see Andriole DA, Jeffe DB. The road to an academic medicine career: A national cohort study of male and female U.S. medical graduates. *Acad Med.* 2012;87(12):1722–1733.