Postbaccalaureate Options for the Medical School Applicant

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Introduction

The ratio of college students who seriously consider medicine as a vocation versus the number who actually become doctors is probably higher than for any other profession. Of course, many typical applicants are very successful in gaining admission to one, or more than one, medical school in the United States. However, we have found that many premedical students who ultimately succeed at matriculating into medical school do so only after many missteps, some of their own making and some due to limited counseling. Our personal experiences over a combined 40 years indicate that these students who have remained true to their commitment to a life in medicine tend to be altruistic students whose personalities seem most appropriate for a career in medicine. But many of these students struggle with being accepted into medical school. How do we, as premedical advisors, best serve these qualified students to help them achieve their career goals?

A significant number of students have taken postbaccalaureate course work before entering medical school, whether it was continued coursework to strengthen their application to medical school or premedical courses taken for the first time, as is indicated by the AAMC 2004 Matriculating Student Questionnaire[1]. In fact, nearly 15% of the matriculating class of 2004 was 26 years or older[2]. These "nontraditional applicants" often needed postbaccalaureate work due to the competitiveness of the medical school applicant pool, explorations of other career paths, time off for volunteering, or other health care experiences. Students who apply often not aware of, or are unsure about, entering a postbaccalaureate or graduate school program. These students need help in assessing which, if any, type of program best fits their individual needs. They also need to reevaluate their overall credentials and realistically identify weak areas in order to apply to a program that will help them reach their goals.

Types of Postbac Programs

In general, premedical postbaccalaureate programs fall into two categories: enhancement and career-changer programs. Enhancement programs give students an opportunity to improve their weak academic record and/or strengthen their knowledge in more advanced scientific coursework. Most programs offer either undergraduate or graduate coursework, a combination of both, or the opportunity to receive a master's degree. With a review of the student's undergraduate academic performance, the MCAT score(s), and healthcare experience, health professions advisors can help students make more informed choices about choosing which program is right for the individual.

Career-changer programs are typically designed for students who have either taken minimal or no science courses. Students have a variety of choices ranging from the highly structured programs, more liberal loosely structured, and lastly the self-study or continued education option. All of these programs allow for students with little or no science background to complete most or all of the prerequisites

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required to sit for the MCAT and apply for admission to medical school. Career-changer programs include individuals straight out of college to those who have long-time established careers.

Occasionally, advisors encounter students who strongly favor the sciences but are undecided on their career path with regard to practicing medicine versus conducting scientific research. These students may do well to enroll in a thesis-based Master's of Science program in a discipline of personal interest, i.e. biochemistry, physiology, neuroscience, etc. While in the program, if they discover that research is definitely appropriate for them, they could decide to continue on for a Ph.D. or join the workforce with their M.S. degree. However, during this time, if they decide that they would prefer clinical medicine, they could make application to medical schools while completing the M.S. degree. Hopefully along the way, they participated in significant community and clinical volunteer or work-related activities, attained strong academic grades from the master's program and have been successful in taking the MCAT. Students applying to medical schools from a graduate program should be aware that acceptance to a medical school is usually contingent upon the completion of their graduate degree. This is sometimes problematic for the applicant since research results and thesis writing may not follow the anticipated time course. In this case, it may be best to wait until the research is completed before applying to medical schools.

Who Can Benefit from an Enhancement Program?

For those students right out of college who have already decided that medical school is their primary goal, but whose credentials would preclude their being positively considered for acceptance, enhancement postbaccalaureate premedical programs could possibly help them become more competitive candidates. As previously stated, the first step is for the student to realistically assess his/her weaknesses. Potential weaknesses may include: lack of clinical exposure; MCAT scores with any section below a 9; science and overall GPAs below a 3.30. Additionally, personal illness or other issues during the undergraduate career could skew one's acceptable GPA for medical school acceptance. Clearly, any of these weaknesses raise the bar for application to medical schools. Even though admission allowances may be made for disadvantaged students applying with slightly lower academic credentials, their successful application to medical schools is difficult to achieve.

In our experience, underqualified applicants to medical school often have not sought, or have ignored, advice from health professions advisors. These less academically qualified students have applied to medical schools only to have been denied acceptance. If these students had met with their advisors, they may have been counseled to not apply to medical schools but rather attempt first to strengthen their credentials. After being denied admittance to a medical school however, if the student remains committed to his/her goal, s/he can select a postbaccalaureate program best suited to his/her needs and weaknesses, hopefully with guidance from a trusted advisor. There should also be a very realistic evaluation of the student's potential to improve credentials. Together, both advisor and student should be able to select appropriate program(s) that will help the student rectify any shortcomings. For example, if a student has been a C/C+ student throughout their college career and ad-mits to having worked to their full capacity, then postbaccalaureate coursework may not be of help to them.

Additionally, some students elect to use AP credits in lieu of several of their intro-level science courses. All too often they then achieve mediocre grades in the more advanced science courses taken in their first-year of college because they were not truly prepared to handle the work and/or compete with upperclassmen. Generally, students are better served to take all of their premedical science courses once in college, independent of what courses they took in high school. Repeating these courses in a college setting will firmly establish a foundation of knowledge in the discipline, allow them to establish strong academic credentials from the outset and allow them to mature into the college lifestyle while growing academically.

However, if a student, or his/her parent, insists on transferring in AP credits and then performs poorly at the onset, yet manages to improve their grades in upper-level science courses during their junior and senior years of college, it may be reasonable for them to seek out appropriate premedical postbaccalaureate programs to help compensate for their initial shortcomings.

If a student's grades suffered due to illness, family issues, sports activities, outside work schedules, or other legitimate reasons, they too could consider post-baccalaureate coursework. Once accepted into a postbaccalaureate program, these students need to focus solely on their academics rather than extra-curricular activities. These students may do better in a lengthier postbaccalaureate program in order to rectify four years of poor academic performance. Furthermore, students with lower MCAT scores (i.e. in the range of 18, 6's on all sections, to a 26) along with solid or weak GPAs, need programs that address multiple weaknesses.

Specific Types of Postbaccalaureate Programs

The scenarios below describe the varied needs of different groups of students and the types of programs that might best address those needs. Information about many programs can be found at the Syracuse University website, hpap.syr.edu/listpb.htm or on the AAMC website at services.aamc.org/postbac.

1) A student who graduated from college with a cumulative undergraduate GPA under a 2.50 with less than a 27 total MCAT score would benefit by demonstrating the ability to perform well in upper-level science courses at the undergraduate level before considering graduate work and then applying to medical schools. The reason we state this is, from our experience, most medical schools will not accept candidates into their programs with an undergraduate GPA far below a 3.00. In order to demonstrate their intellectual capacity, the student would be well-advised to take a minimum of three courses per semester for a full-year at a strong four-year institution. The student would do well to perform at a minimum 3.50 GPA level and re-take the MCAT after this one year. If successful, it may be possible to realistically move on to a graduate program to further advance their qualifications or it may be appropriate to apply to medical school directly after increasing their GPA and MCAT score.
2) A student with a cumulative undergraduate GPA performance above a 2.50 but below a 2.70, with a total MCAT score above a 27 total, may benefit by taking graduate courses in any strong four-year institution. Based upon personal experiences with graduate admissions, these students are more likely to be accepted into a graduate bioscience program rather than gaining admittance into a special master's type post-baccalaureate program. These students may want to seek out programs leading to either a thesis-based or non-thesis based master's degree. The courses must be scientifically rigorous and the student should probably achieve a graduate GPA around a 3.50 to be a successful applicant to medical school. Non-bioscience based programs, including most public health programs resulting in a master's degree, would more than likely not enhance the student's credentials for medical school.[3]
3) A student with a cumulative undergraduate GPA around the 3.00 and a total MCAT score less than a 27 could benefit from a strong science based program, as above, along with an MCAT review program. One such program offered at Drexel University College of Medicine is the Medical Science Preparatory (MSP) program. Students in the one-year MSP certificate program take four graduate biological science courses, a laboratory techniques course, a community dimensions course with a community service component and two undergraduate advanced review courses in physics and chemistry (covering general chemistry and organic chemistry topics). Students also take a graduate student-driven MCAT review course plus six full-length mock MCAT exams throughout the year. Students in the MSP program have successfully improved their MCAT scores an average of 5-6 points over the past five years with many students scoring above a 30. Students who achieve a graduate GPA of 3.00 or better and MCAT scores above a 26 are automatically granted acceptance into the optional second year of the program where they enroll in actual medical school courses and work towards their non-thesis Master's of Biological Science (M.B.S.) degree. The benefit of this type of program is that students are given the opportunity to increase their undergraduate GPA, take graduate coursework, and improve their MCAT score. Students applying to medical school from this program have been very successful in gaining acceptance into U.S. medical schools and have even gained multiple acceptances while completing the second year of the program.

4) Students with cumulative undergraduate GPAs above 3.0 and MCAT scores above a 26 could consider a special master's postbaccalaureate-type graduate program where they take actual medical school courses and are graded in relation to the University's own medical school class. This allows the student a chance to prove their capacity to do well in a rigorous medical school program. A true special master's post-baccalaureate program is one where the student takes the exact same medical school course at the same time as the medical school student. They have the same professors and they take the same lectures. They also take the same exams and quizzes and are graded in relation to the medical school performance. A variety of programs listed as special master's programs exist, however, when comparing programs know that some of these programs offer courses taken in the evening taught by medical school professors and are not graded in relation to the medical school class.

   The Interdepartmental Medical Science (IMS) program offered at Drexel University College of Medicine is one example of a true special master's program. The program offers a non-thesis master's degree for students wishing to apply to health professional schools. The advantage to a special master's program over other non-thesis master's programs in a specific bioscience discipline is that they offer the student an opportunity to self- assess their commitment and continued desire to work at a level required to excel in medical school. This program also allows medical school admissions officers to more accurately predict the student's ability to perform in a rigorous medical school curriculum than for students coming from other graduate bioscience programs.

   A benefit of the Drexel University IMS program is that after successful completion of the first year, students are awarded a certificate of program completion. If a student wishes to continue postbaccalaureate studies, depending upon one's academic credentials from the first year, s/he may elect to return for a second year to earn the master's degree. When comparing the Drexel University special master's program to other special master's programs, another benefit is that a student may only need to finance one year of tuition rather than the equivalent of two.

   Students who had a strong upward trend in the GPA during their undergraduate academic career may apply to medical school in the summer preceding the start of a special master's program. Under these circumstances, the medical school will have six months of potentially strong postbaccalaureate coursework to add to the evaluation of the student's credentials, assuming the student applied the previous year. This may or may not be in the best interest of the applicant. Therefore, the applicant should seek advice from the health professions advisor before embarking upon such a costly process.

   If before matriculating into the special master's program, the student was right at the cusp of medical school acceptance (perhaps on a medical school wait list), this six months added coursework may be sufficient to gain acceptance to medical school. Again, the student can garner much from the advice from an advisor who has had several years experience with the program in which they are enrolled.

   For many students with weaker credentials, medical schools are looking for more coursework than one semester provides. These students should not apply at the onset of their post-baccalaureate program, but instead apply following completion of the first year. The IMS program offers counseling to incoming students in order to assess which option is most beneficial.

   A program with a second year affords many of these students the opportunity to take additional coursework to further improve their credentials. Drexel University offers the students in the IMS program the opportunity to enter a second year and earn a Master's of Medical Science (MMS) degree. During the MMS year students are permitted to take a second year medical school course along with other graduate coursework.

5) Special programs for the disadvantaged student exist: The AAMC's 1991 "Project 3000 by 2000" initiated to admit 3000 underrepresented minority (URM's) students into medical schools by the year 2000 never reached its goal. Although URM's account for about 25% of the U.S. population, they account for less than 8% of practicing physicians[3]. This minimal number of URM practicing physicians negatively impacts on health

care delivery in our country. In order to address this imbalance, numerous Nationwide programs have been developed that assist disadvantaged students in gaining acceptance to medical school such as the Drexel Pathway to Medical School (DPMS) program offered by Drexel University College of Medicine. These students are self-described as disadvantaged applicants using the AAMC criteria. DPMS students typically matriculate into the program with a cumulative undergraduate GPA around a 3.00 and total MCAT score around a 20.

Some medical schools offer summer programs which expose students to a limited science tutorial program in which they must attain a certain level of proficiency before they can be considered for acceptance to their school. Other schools accept students but require a summer enrichment program to facilitate the student's transition into their medical school. In some instances student performance may dictate that they be placed in a decelerated program (first year of medical school taken over a two-year period).

The DPMS program melds aspects of all of the above to help promising disadvantaged students. These students are accepted conditionally into our medical school. They participate in a six week summer enrichment program followed by one-year of medical school and graduate school courses along with a one-year MCAT review program. If these students earn a minimum 3.00 GPA in their course work and attain a minimum of 23 on the MCAT (with a minimum of 8's in the biological and physical science sections and 7 in the verbal reasoning section) they retain their seat in the medical school class. Virtually all similar types of programs for disadvantaged students are small, competitive and intensely student-oriented.

Conclusion

When presented with complex scenarios relating to a student they believe can overcome their prior obstacles and would make a truly caring clinician, health professions advisors should consider contacting premedical postbaccalaureate program directors for direction. It should be clear that advising of premedical students is an extremely complex process. The health professions advisor must be able to accommodate the needs of individual students who present a broad spectrum of academic strengths and weaknesses. Often there exists more than one solution to meet the needs of the student. Arriving at a singular solution depends upon a cooperative activity between the advisor and the student. Ultimately there is a great deal of satisfaction in seeing these late-blooming, worthwhile students finally achieve their goals.

References

1 www.aamc.org/data/msq/allschoolsreports/msq2004.pdf

2 www.aamc.org/data/msq//allschools/msq2004.pdf

3 Personal conversations with medical school admissions officers

4 Strayhorn G. (2000) A pre-admission program for underrepresented minority and disadvantaged students: application, acceptance, graduation rates, and timeliness of graduating from medical school. *Academic Medicine*, 75: 355-361.