Medical School Admissions: More than Grades and Test Scores

Medical educators agree that success in medical school requires more than academic competence[1]; it also requires integrity, altruism, self-management, interpersonal and teamwork skills, among other characteristics.[2,3] The AAMC and its member medical schools have long recognized the importance of these factors and have explored ways to identify applicants who have academic competence and the personal qualities and experience necessary to be outstanding and compassionate physicians.[4]

While many medical schools already incorporate data about non-academic characteristics into their admissions processes,[5] these processes vary widely by school due to differences in the size of their applicant pools and each school's unique educational mission and goals. This *Analysis in Brief (AIB)* reports the results of a two-part study designed to learn more about how admissions committees use the data applicants provide to select the students they admit by first, determining how academic data are used and second, determining what characteristics are important to selections admissions officers make.

Methodology
We calculated the percentages of 2008, 2009, and 2010 applicants accepted into medical school according to their undergraduate grade point averages (UGPAs) and MCAT scores.[6] We then identified the combinations of UGPAs and MCAT scores at which different percentages of applicants were accepted into one or more medical school.

We also interviewed admissions deans, committee members, and staff (> 75 participants) at eight medical schools[7] to create a survey about admissions decision making. The survey was administered to admissions officers at all the U.S. medical schools and the subset of the Canadian schools that use the MCAT exam (n = 142). The survey asked admissions officers to rate the importance of various application data on admissions decisions. Respondents from 113 of the U.S. medical schools completed at least 80 percent of the survey and were included in the analyses.[8] The final U.S. sample (71 public and 42 private institutions) mirrors the distribution of public and private schools and was geographically diverse.

Results
The complete table showing percentage and number of applicants accepted into at least one medical school by UGPA and MCAT is available in this *AIB*'s supplemental material. These data show that although UGPAs and MCAT scores are important factors in admissions, they are not the sole determinants of admissions decisions. For example, approximately eight percent of applicants with UGPAs ranging from 3.80 to 4.00 and MCAT total scores ranging from 39 to 45 were rejected by all of the medical schools to which they applied. In contrast, about 18 percent of applicants with UGPAs ranging from 3.20 to 3.39 and MCAT scores ranging from 24 to 26 were accepted by at least one school.

Other important factors in medical student selection. To learn about other factors used in medical student selection, we investigated the importance of a wide range of academic, experiential, demographic, and combined data. Figure 1 shows the application data that were rated by admissions officers as most important to admissions committees' decisions about which applicants to interview and accept into medical school.

Overall, admissions officers reported a wide range of data are important to admissions committees' decisions. The data are used differently, however, in deciding whom to interview and accept into medical school. Even though UGPA and MCAT were high on the list in deciding which applicants to *interview*, these dropped in importance in deciding which applicants to *admit*.[9] Admissions officers reported that

1 Albanese MA, Snow MH, Skochelak SE, Huggett KN, Farrell PN, Assessing personal qualities in medical school admissions. Acad Med. 2003;78:313-21.

2 Adams K., Goodwin G, Searcy C, Norris D, Oppler S. Development of a performance model of the medical education process. Washington, DC: The American Institutes for Research, 2001.

3 Carrothers R, Gregory S, Gallagher T. Measuring emotional intelligence of medical school applicants. Acad Med. 2000;75: 456-63.

4 Kirch DG. Are we meeting the public's expectations? The Reporter. 2011.

5 Eva K., Reiter H, Rosenfeld J, Norman G. The Ability of the multiple mini-interview to predict preclerkship performance in medical school. Acad Med. 2004:70: S40-42

6 These analyses were originally conducted with data from 2005-2007 applicants; we updated the analyses to show results from 2008-2010 applicants for this AIB.

7 Sites were selected to be representative of AAMC's constituents. The sites included five public and three private institutions and were geographically diverse (Northeast = 1; Central = 3; South = 2; West = 1; Canada = 1).

8 Responses from seven Canadian medical schools were excluded from this study because admissions rate data were not available for Canadian schools.

9 This study also included a question about the importance of application data in deciding which applicants to invite to submit a secondary application. Fifty-four admissions officers reported that their schools invite applicants to submit secondary applications. The most important application data used to invite applicants to submit secondary applications are: UGPAs, MCAT scores, state residency, and U.S. citizenship/residency.

non-academic data, such as interview scores and letters of recommendation, are the most important data for deciding whom to accept into medical school. There was variation across schools.

Discussion

These acceptance data show that some applicants with strong academic qualifications are not accepted into medical school and many with lower academic qualifications are. Admissions committees use a wide range of data—such as interview reccomendations, letters of recommendation, UGPA, medical community service—to decide which applicants to accept into medical school. While UGPA and MCAT scores help admissions com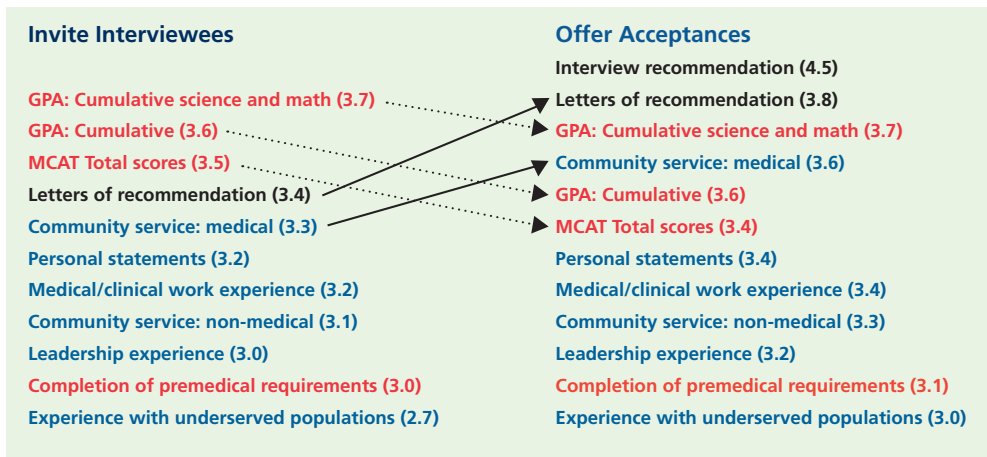mittees identify academically qualified applicants, committees also consider non-academic data to identify applicants who best fit their schools' unique educational missions and goals.

These data also suggest that academic data are slightly more important for deciding which applicants to interview than for deciding which interviewees to accept. This is likely due to the ease of incorporating academic data into automated screening processes. As medical schools continue to pursue the benefits of diversity, the development of new tools to collect data about applicants' non-academic characteristics is of critical importance.

Future research should investigate how admissions committees learn about applicants' non-academic characteristics and whether the "weight" of such information varies by institutional characteristics, such as public/private status, educational mission or size of the applicant pool. As a first step in this process, a companion *Analysis in Brief* on the medial school interview explores how admissions interviews are used to assess non-academic characteristics.[10] In addition, future research should continue to investigate possibilities for further assessing applicants' non-academic characteristics. Findings from this study will be used to inform initiatives focused on transforming medical school admissions.

Figure 1. Importance of Application Data to Admission Officers at 113 Medical Schools in Their Decisions to Invite Interviewees and Offer Acceptances

Invite Interviewees	Offer Acceptances
	Interview recommendation (4.5)
GPA: Cumulative science and math (3.7)	Letters of recommendation (3.8)
GPA: Cumulative (3.6)	GPA: Cumulative science and math (3.7)
MCAT Total scores (3.5)	Community service: medical (3.6)
Letters of recommendation (3.4)	GPA: Cumulative (3.6)
Community service: medical (3.3)	MCAT Total scores (3.4)
Personal statements (3.2)	Personal statements (3.4)
Medical/clinical work experience (3.2)	Medical/clinical work experience (3.4)
Community service: non-medical (3.1)	Community service: non-medical (3.3)
Leadership experience (3.0)	Leadership experience (3.2)
Completion of premedical requirements (3.0)	Completion of premedical requirements (3.1)
Experience with underserved populations (2.7)	Experience with underserved populations (3.0)

Note. Mean importance ratings are shown in parentheses. Application data are presented in descending order of importance to admissions committees' decisions about which applicants to interview and accept into medical school. The admissions data presented standard deviations ranging from 0.9 to 1.7, indicating variation in importance across medical schools. Data about the importance of "interview recommendations" were not collected at the "invite interviewees" stage. See supplemental material for a complete list of application data rated, mean importance ratings, and standard deviations.

Color Scheme
Red = Academic data
Blue = Experiential data
Green = Demographic data
Black = Combination of multiple types of data

Rating Scale
5 = Extremely Important
4 = Very Important
3 = Important
2 = Somewhat Important
1 = Not Important

Authors:

Dana Dunleavy, Ph.D., Manager, Admissions Research

Henry Sondheimer, M.D., Senior Director, Academic Affairs

Laura Castillo-Page, Ph.D., Senior Director for Diversity Policy and Programs and Organizational Capacity Building

Ruth Beer Bletzinger, M.A., formerly Director of Special Projects, Diversity Policy and Programs

10 Dunleavy DM, Whittaker KM. The Evolving Medical School Admissions Interview. AIB. 2011;11(7).