ANALYSIS IN BRIEF

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Identifying Behaviors of Successful Medical Students and Residents

Medical educators in the United States agree that successful medical students and residents share a set of attributes both academic and non-academic, which may be categorized broadly as knowledge, skills, attitudes, and values. But while admissions committees have reliable access to academic benchmarks, such as standardized test scores and grade-point averages, a lack of uniform, objective criteria has often impeded the evaluation of non-academic attributes.

To assist schools in the formulation of such criteria, the AAMC has conducted a study to identify a list of relevant non-academic behaviors. The list in its current state may be a useful tool for medical schools trying to quantify non-academic performance; it could also be the basis for additional standardized tests for use in the admissions process.

Part of a recent MCAT program review, the AAMC study was aimed at: (a) identifying categories of behavior associated with successful and unsuccessful performance in medical school and residency, (b) identifying specific behaviors within each behavior category, and (c) developing behavior rating scales for the behavior categories. Approximately 1,700 "critical incidents," or accounts identifying key behaviors, were collected from medical faculty, residents, and students. (See Figure 1.)

Figure 1: Critical Incident Report Defined

A critical incident report:

1. Describes significant performance-related events.
2. Focuses on people's behaviors with regard to:
   - the **actions** they took;
   - what they said or did in particular **situations**; and
   - the **results** of those actions.

About 170 faculty members, residents, and students from 21 medical schools in seven cities across the four AAMC geographical regions were recruited for the study by the medical schools involved. These participants documented a total of 1,216 student- and 500 resident-related critical incidents.

- **A recent AAMC study identified a number of key behaviors for doctors-in-training that medical schools can use in establishing non-academic admissions criteria.**
- **The key behaviors identified are the same among residents and medical students, indicating that a core set of skills are relevant throughout the continuum of medical education.**

Two groups of two behavioral researchers each sorted the incidents into categories of personal characteristics based on the type of behavior exhibited, first with each researcher working independently, then discussing and arriving at consensus within the group, and finally comparing findings between groups. The category development process was performed on half of the incidents and repeated independently on the second half as a form of cross-validation.

The researchers agreed that 10 categories of behavior best describe the key aspects of performance for medical students and residents. The following summarizes the behavior categories for both residents and students:

1. **Shaping the learning experience** (students only) -- taking an active role in their own learning and knowledge acquisition.
2. **Self-management and coping skills** (students only) -- balancing the demands of medical school with other aspects of life by prioritizing, setting limits, adapting to diverse environments, and appropriately requesting feedback and assistance from professors or other students.
3. **Fostering a team environment** (students only) -- fostering a cooperative work environment and working as a team, helping others, showing

sportsmanship, and communicating with team members.

4. **Interpersonal skills and professionalism** (both groups) -- interacting with colleagues, professors, residents, physicians, and other health care professionals in a mature, respectful, and professional manner.
5. **Interacting with patients and families** (both groups) -- empathetic and communication-oriented behaviors when interacting with patients and their family members.
6. **Technical knowledge and skill** (both groups) -- demonstrating an appropriate understanding of medical knowledge and skills.
7. **Extra effort and motivation** (both groups) -- being motivated and conscientious, as well as exhibiting leadership.
8. **Ethical behavior** (both groups) -- being honest, exhibiting integrity, adhering to the formal code of medical ethics, maintaining patient confidentiality, maintaining appropriate interpersonal relationships with patients, adhering to the ethical norms of the profession, reporting others' unethical behavior, and appropriately reporting mistakes, errors, and contradictory findings.
9. **Mentoring and educating students** (residents only) -- structuring work activities so that students can learn from their experiences, suggesting readings to help students excel, demonstrating techniques and procedures to students, being patient with and showing concern for students, responding to questions in a constructive manner, providing guidance to students regarding their educational process, and providing performance feedback to students.
10. **Maintaining calm under pressure** (residents only) -- maintaining composure during stressful situations, especially those occurring when performing medical procedures.

Next, the researchers developed behavioral summary rating scales with examples of low, moderate, and high performance extracted from the critical incidents within each behavior category. (See Figure 2.)

Together, the categories for students and residents provide a model of performance that spans the medical education process. The overlap between the two groups' behavior categories suggests that there is a core set of behaviors that become relevant early in medical school and continue to remain important throughout residency. The consistency of the categories developed by the two independent groups of researchers supports the conclusion that the behavior categories identified capture important aspects of performance and are generally stable across geographic regions and medical schools in the United States. These categories of behavior may be useful to medical school admission committees as they try to determine which related undergraduate student behaviors might be relevant to the admissions process.

Figure 2: Examples of Behaviors for Different Behavior Categories Interpersonal Skills & Professionalism

Low

Criticizing peers, supervisors, or faculty in public; berating or verbally attacking patients or members of the public at large.

Moderate

Refraining from telling culturally insensitive jokes; withdrawing from situations where someone else is being offensive.

High

Discreetly handling or reporting cases in which another colleague has acted unprofessionally or irresponsibly.

The behavioral summary scales developed will go through a final review and refinement process. In this process, medical educators will examine the existing performance-category and behavioral-summary scales following some of the procedures that the researchers used for classification. The refined scales could then be used in setting specifications for tests of performance within each behavior category, which might provide a valuable set of assessment tools for medical school admissions committees.

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