Medical school aims to take bright students and transform them into physicians prepared for the transition to residency training. Still, that requires a certain skill set from first-year medical students.

Laid out by the Association of American Medical Colleges (AAMC), the core competencies for entering medical school consist of a list of 15 traits the ideal medical student should possess. The list is broken down into three groups. Preprofessional competencies, thinking and reasoning competencies and science competencies.

For incoming medical students, the list offers a range of skills upon which one can brush up in the weeks leading up to the beginning of training.

**Preprofessional competencies**

This group of competencies is the largest and most broadly interpreted list of traits. The nine competencies in this group are:

- Service orientation.
- Social skills.
- Cultural competence.
- Teamwork.
- Oral communication.
- Ethical responsibility to self and others.
- Reliability and dependability.
- Resilience and adaptability.
- Capacity for improvement.
How one goes about gaining these core competencies can vary, but a number of them are possible to hone through volunteer work.

AMA member Avani Patel, MD, MHA, volunteered with Habitat for Humanity before she started training at the University of Mississippi School of Medicine in Jackson.

“One of the ways you can build teamwork skills and social skills is through community service,” said Dr. Patel, now a fourth-year psychiatry resident at the University of Mississippi Medical Center. “If that’s something you feel you need to do better with, whether it’s that sense of control or sense of needing to lead all the time, community service can really help you improve those skills and your patience with others.”

Science competencies

The science competencies expected from medical students were likely covered in your undergraduate training or in some form of your preparation for the Medical College Admission Test. Just two of the 15 core competencies fall into this category, described below.

Living systems: The AAMC says the incoming medical student should be one who “applies knowledge and skill in the natural sciences to solve problems related to molecular and macro systems, including biomolecules, molecules, cells and organs.”

Human behavior: The ideal incoming student “applies knowledge of the self, others, and social systems to solve problems related to the psychological, sociocultural, and biological factors that influence health and well-being.”

While all the competencies are rooted in a student’s scholastic experience, these two are the most rooted in a prospective medical student’s formal education. Portions of human behavior may be related to the structural and social determinants of health, which are possible to explore through your own volunteer work or lived experiences.

Subha Hanif, MD, is a third-year physical medicine and rehabilitation resident at Mary Free Bed Hospital in Rochester, Michigan. Prior to beginning her medical training at Michigan State College of Human Medicine, she gained insight on factors that influence health and well-being during her undergraduate work running lectures on women’s health in Southeast Detroit.

“At a young age, I learned about disparities in care and became interested in how medicine plays a role in that,” Dr. Hanif said.
Thinking and reasoning competencies

While they may be a little less fact and knowledge driven than the science competencies listed above, the thinking and reasoning competencies also tend to be arenas students build through their scholastic endeavors.

The four competencies that fall in this category are:

● Critical thinking.
● Quantitative reasoning.
● Scientific inquiry.
● Written communication.

Dr. Hanif found she was able to sharpen her thinking and reasoning skills by volunteering to help with research during her college years. Working with a physician in a local emergency department, she researched the prevalence of angioedema in patients, eventually publishing a paper on the topic.

“I went through the whole process of critically examining a question, learning how to analyze it, learning how to go through the IRB [institutional review board], then also formulating a hypothesis and doing data collecting through the EMR,” she said.

“More med schools want students to be involved in some type of research project, and it may have given me a leg up on my peers,” she said. “I came in with a background in data analysis, and that matters when an attending asks you to read up on a topic in JAMA.”

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