What it takes for medical students to identify as systems thinkers

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While physicians traditionally have been expected to prioritize medical knowledge and patient care, today’s physicians have a significantly broader remit. To meet the needs of patients and populations, as well as the health care system itself, they also need to view systems thinking as part of their professional responsibility and identity.

To achieve this, medical schools have begun incorporating health systems science (HSS)—an understanding of how care is delivered, how health professionals work together to deliver that care, and how the health system can improve patient care and health care delivery—into their curricula. But the degree to which medical students assimilate this notion of the physician is unclear.

For a qualitative study published in Academic Medicine, researchers investigated how students envisioned their professional identities in relation to the health care system. It also identifies some of the experiences relevant to identity formation.

Coursework does not equal identity

“Existing research suggests medical students prefer patient care activities over systems improvement activities, and residents struggle to understand the vision and purpose of quality improvement within health systems,” wrote the study’s authors, who include Andrea N. Leep Hunderfund, MD, MHPE, associate professor of neurology at Mayo Clinic Alix School of Medicine, and Jed Gonzalo, MD, MSc, professor of medicine and health systems and implementation science and senior associate dean for medical education at Virginia Tech Carilion School of Medicine. Dr. Gonzalo is also a faculty member of the AMA Health Systems Science Scholars program.

“While some residents excel within particular health systems science domains, milestone-based ratings of performance during internship do not differ between graduates of medical schools with and
without HSS curricula,” the authors added, noting that “factors outside the HSS curriculum may contribute to identification with systems-related roles.”

Learn why everyone needs to be a systems thinker in health care.

**What promotes, what undermines**

From December 2018 to September 2019, the researchers interviewed 48 second- and fourth-year students at four U.S. medical schools with health systems science curricula—Mayo Clinic Alix School of Medicine, Penn State College of Medicine, University of California, San Francisco, School of Medicine, and Vanderbilt University School of Medicine. Each school is a member of the AMA Accelerating Change in Medical Education Consortium.

Interview questions explored students’ understanding of the health system, systems-related activities they envisioned as physicians, and experiences and considerations that have shaped their perspectives. Answers were analyzed iteratively using inductive thematic analysis.

Among their findings, researchers identified seven factors that inform if—and how—medical students imagine themselves being in systems-related roles.

Two of these promote identification: being motivated to do something but being uncertain what to do exactly and being motivated to achieve specific roles—what the authors call discovering and developing, respectively.

Then there are these five that undermine identifying as system thinkers:

- Seeing the system as not a personal interest.
- Feeling overwhelmed and underprepared.
- Being skeptical of making a difference.
- Feeling the system is not a priority right now.
- Fearing engagement in it would be too difficult, time-consuming or costly.

These can be thought of as distancing, growing, doubting, deferring and worrying about being deterred.

**Know the best practices**
The study also features a table with corresponding evidence-based, practical considerations to support students in forming identities that prioritize systems-related roles. Its strategies promote responsibility, affinity, ability, efficacy, priority, reality and consequences.

“At the end of my career, I’ll be in a position where the system is still not perfect and still has several holes in it, but hopefully I will look back and see patches I’ve made along the way,” one medical student told the study’s researchers. “That would be something I would be proud of.”

The AMA has released the second edition of the *Health Systems Science* textbook, which is a framework for this third pillar of medical education. A companion, *Health Systems Science Review*, provides case-based questions followed by discussions of answers and suggested readings.