Health systems science skills must survive transition to residency

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Although medical schools have little room in their curricula for new topics, just about everybody in medical education appreciates the value of health systems science (HSS) in the training of future physicians. Health systems science is the study of how health care is delivered, how health care professionals work together to deliver that care, and how the health system can improve patient care and health care delivery. It means smarter decision-making, better care for patients and lower costs.

But making health systems science—now regarded as the third pillar of medical education—a feature of clinical practice is another matter altogether. A recent study reinforces this point.

The study, published in the *Journal of Graduate Medical Education*, examines the effectiveness of health systems science curricula by comparing internship milestones of graduates from schools in the AMA Accelerating Change in Medical Education Consortium who received health systems science training with those in the consortium who did not.

In collaboration with the Accreditation Council for Graduate Medical Education, which compiled data on the milestones, researchers looked at results in the internship year at six and 12 months in a number of specialties: internal medicine, emergency medicine, family medicine, ob-gyn, pediatrics and surgery.

At six months, the groups demonstrated similar HSS-related levels of milestone performance. At one year, however, AMA consortium graduates in two specialties who received health systems science training scored higher.
Those in obstetrics and gynecology scored minimally higher on two systems-based practice subcompetencies: “patient safety and systems approach to medical errors: participate in identifying system errors and implementing potential systems solutions” and “cost-effective care and patient advocacy.”

Meanwhile, graduates in internal medicine training scored minimally higher on three subcompetencies: "works effectively within an interprofessional team (e.g., peers, consultants, nursing, ancillary professionals and other support personnel),” “monitors practice with a goal for improvement” and “learns and improves at the point of care.” There were no significant differences between the groups in the other specialties examined.

3 key takeaways

The study notes several reasons for the findings of no significance. These issues, outlined below, point to priority issues for medical educators.

Medical schools need more uniform health systems science curricula. “Each school addresses HSS content with its own focus, intensity and pedagogy (provided as online supplementary data), which limits uniformity of HSS education across all studied medical schools,” wrote the authors, who include Sally Santen, MD, PhD, professor of emergency medicine at Virginia Commonwealth University School of Medicine and adjunct professor of emergency medicine and medical education at University of Cincinnati College of Medicine.

The AMA provides a number of resources to support teaching health systems science, including the Health Systems Science textbook, the Health Systems Science Review book, the AMA Health Systems Science Learning Series of online training modules and the AMA Health Systems Science Scholars program, which provides faculty development and curricular resources.

The transition to residency needs work. “Transfer of knowledge and skills is an important issue in higher education,” the authors wrote. “What may be learned in one setting or context such as medical school may not transfer to the next phase of training.”

The AMA launched the Reimagining Residency initiative in 2019 to close the gap between undergraduate and graduate medical education. Through $15 million in grants over five years, it is funding eight projects to help create a meaningful and safe transition from undergraduate medical education to residency, establish new curricular content and experiences to enhance readiness for practice, and promote well-being in training.

Assessment of health systems science competencies needs to be prioritized. “We need better
ways to measure HSS competency in medical school and across the continuum. If I was queen for a
day, I would love to match data for graduating students as they move into residency,” Dr. Santen said
in an interview.

“I would love to take something as basic as the history and physical or patient handover and say: If
the medical school thinks they have taught a student the history and physical or patient handover, can
the student actually do it in residency?” she said. “We literally have not done that. There has been a
minimal crossing of data between medical school and resident programs.”