

As pandemic hit, these medical students acted on systems approach

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When the COVID-19 pandemic hit Cuyahoga County, Ohio, students at Case Western Reserve University School of Medicine, like their peers around the country, were uprooted from their clinical training. But instead of waiting out the biggest public health crisis of their lifetimes, they dove headlong into the response to it and gained real-world experience in a crucial area of their education: systems thinking.

Content related to health systems science—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—has become more frequent on the United States Medical Licensing Examination (USMLE). The National Board of Medical Examiners includes the topics in its USMLE Content Outline and offers a dedicated health systems science subject examination.

To help medical students, the AMA Accelerating Change in Medical Education Consortium has collaborated with the "InsideTheBoards" podcast to create a health systems science (HSS) podcast series. Each episode of the HSS series offers on-the-go learning by breaking down practice exam questions with expert guests.

A recent episode features a conversation with a physician mentor and a medical student at Case Western Reserve who helped develop a COVID-19 contact tracing and cluster investigation program with the Cuyahoga County Board of Health.

More than just staying busy

As elsewhere in the U.S., Cuyahoga County relied on contact tracing to understand and limit the spread of COVID-19. But whereas some counties needed weeks to staff their contact-tracing operations, students from Case Western Reserve were working with the public health department within days of losing their rotations.

"We built this plane as we flew it. There was no playbook, and there still isn't—we're just figuring it out as we go," said Heidi Gullett, MD, MPH, associate professor of family medicine and leader of the Block 1 first-year curriculum. "It was our students at the table every step of the way. ... That, to me, was energizing as an educator, and that's the way I think medical education should be."

Students weren't just answering waiting phone lines. They also helped build a system that didn't exist previously—one that included hospitals, residential care facilities, the general public and employers.

It was a crash course in emergency response and improvisation, as "there were no communication routes between all of us in order to work together to fight this pandemic," said Andrea Szabo, a third-year medical student who was among the first medical students to get involved.

Long-term educational value

"It's been readily apparent over the last 10 months in the COVID pandemic how important understanding systems—and thinking through systems and adaptations within systems—can really help improve the health of both individuals and populations," said Dr. Gullett, who also serves as the medical school's population health liaison at the Cuyahoga County Board of Health.

It's important for medical students, residents and fellows to think about how they are influenced by the system, but it's just as important for them to think about how they play a part in changing it, she noted.

"It's a two-way thing," Dr. Gullett said. "If you look at a smaller microsystem level, you can see that you could be the one that's contributing to that patient safety issue in a really positive way. Or you could be the one that thinks about how we redesign a workflow so that it works better or it's more efficient."

Systems thinking is, in fact, the most important thing Dr. Gullett and her colleagues have used in the pandemic

"We're still using" it, she said, as "today we're trying to figure out how to give our vaccines and get our vaccines deployed."

A description of this project was submitted to the 2020 Health Systems Science Student, Resident and Fellow Impact Challenge and selected to be published in the challenge's abstract book along with



dozens of other notable projects.

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