

Health systems science proving vital during pandemic response

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Brendan Murphy

News Writer

For half a decade, the AMA Accelerating Change in Medical Education Consortium has worked to make health systems science (HSS)—the study of *how 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*—a vital part of the medical school curriculum. Touted as the third pillar of medical education, HSS domains have been effective tools in fighting against the COVID-19 outbreak. A new chapter in a recently released second edition of *Health Systems Science*, a textbook featuring contributions from faculty members within the AMA consortium, outlines how these practices are best utilized during a pandemic.

The second edition text is a follow-up the successful first edition, which was published in 2016, sold thousands of copies and was used in medical schools across the world. The chapter on health systems science during pandemics is available as a free download.

Health systems science in action

The concepts that make up health systems science are wide-ranging. Some are tangible, such as informatics and population health, others are more abstract such as teamwork and communication.

Among the HSS concepts that are being applied effectively in the COVID-19 fight:

Population health: A pandemic presents a critical need to integrate and unify traditional health care and public health. Physicians and other health care professionals treating patients infected with COVID-19 must identify ways to prevent spread to others and work with public health entities working to contain this pandemic.

Leadership: In mid-March when the response to this pandemic was accelerating in the U.S., the Association of American Medical Colleges issued guidance strongly suggesting that medical students

not be involved in direct patient contact activities. This did not stop medical students from using their leadership skills to create opportunities to make a meaningful impact.

Patient safety: In the early days of the pandemic there were efforts to keep COVID-19 patients separate from other patients in health care facilities to reduce spread and maintain patient safety. Patient safety strategies must be used to help reduce iatrogenic infections and maintain health system capacity.

Teamwork: COVID-19 is straining the health system, providing a new urgency for health care professionals to work effectively in teams. Teams are being formed across disciplines and medical specialties to care for COVID-19 patients, especially those in special circumstances such as pregnancy.

Clinical informatics: Most of the U.S. health system has access to some form of an EHR, and these computer systems have become vital outbreak management tools. A full understanding of what an EHR can do has allowed them to be used to develop scripted triaging, electronic check-in, standard ordering and documentation, secure messaging, real-time data analytics, and telemedicine capabilities.

Structural and social determinants of health: An understanding of the structural and social determinants of health has also emerged as critical to controlling this pandemic because the impact of COVID-19 is hugely inequitable. Across the country, minorities are disproportionately infected and dying from COVID-19, including patients who are Black, Latinx, and Native American.

Systems thinking: Systems thinking, the bedrock of all health systems science domains, is critical for those working at every level of this crisis to understand the structural challenges the pandemic presents to our health care institutions and contribute to creating the most effective possible solutions.

The AMA has curated a selection of resources to assist residents, medical students and faculty during the COVID-19 pandemic to help manage the shifting timelines, cancellations and adjustments to testing, rotations and other events at this time.