Key lessons in health systems science that pre-meds should know

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The topic of health systems science—a foundational platform and framework for the study and 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 an increasingly significant part of medical school curriculum in recent years. Its importance has been further spotlighted during the COVID-19 pandemic.

For future medical students, a base-level understanding of key domains of health systems science can offer a leg up at the outset of medical school. These key health systems science concepts offer a starting point for aspiring medical students.

For additional instruction, each topic has a module in the Health Systems Science Learning Series are available for free via the AMA Ed Hub™ (login required).

1 What is health systems science?

A fundamental grasp of health systems science and how it intersects with the basic and clinical sciences is essential for trainees and physicians in the modern environment.

2 Introducing health care policy and economics
Economic challenges in America’s health systems spurred reforms to the cost of care. Understanding the background on that topic can help clinicians positively impact patient outcomes.

3 Identifying the fundamentals of medical ethics

Ethics, the law and the fiduciary nature of the patient-physician relationship are thorny issues that clinicians come across nearly daily.

4 Establishing essential leadership behaviors

As health care systems strive to become high-reliability organizations, they need strong leaders at all levels to deal with the challenges that continually emerge as a result of growing populations, new standards of care, changing government regulations and shifts in access to care. Students should appreciate that they too can be leaders.

5 What are the components of value-based care?

High-value care is about much more than containing costs. It’s also a recipe for improving patient outcomes, safety and satisfaction. But what exactly is it and how is it measured?

6 What makes team-based care effective?
Health care organizations can dramatically cut the number of deaths from medical errors each year by taking lessons from high-reliability organizations—like those in aviation and the military—that have succeeded in preventing failures.

**7 How systems thinking applies to health care**

Practicing medicine today is so much more than the interaction between you and the patient sitting in front of you. Physicians must critically think about how all moving parts in a system can work together to improve the patient’s health, meet their health care needs and anticipate and mitigate safety threats or other problems.

**8 What to know about health care delivery systems**

An understanding of the objectives, structures, processes, and outcomes of current health care systems in the United States will give medical students the ability to deftly navigate them when they become practicing physicians.

**9 Understanding and improving population health**

The traditional health care delivery model of focusing on the individual patient but not looking at the health of the population limited impact on communities. Looking at entire patient populations is the future of systems-level care.

**10 What are social determinants of health?**

Where your patients were born along with where they work, play and grow older all have a big impact on what their health outcomes will be, with research showing that a person’s overall health is mostly driven by social, economic and environmental factors.
Content related to health systems science 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.

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, and the AMA Health Systems Science Scholars program, which provides faculty development and curricular resources. The AMA also collaborated with Inside the Boards to create a series of podcasts about health systems science.