

Informatics = essential MD competency

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In an article published in the Sept. 15 edition of the *Journal of the American Medical Association*, (*JAMA*), author Edward H. Shortliffe, MD, PhD, points out that although information underlies all clinical work, and despite the growing role that information management and access play in healthcare delivery and clinical support, there is a dearth of informatics competency being developed in America's future corps of physicians. Formalized education in the application of informatics and the use and methodologies of health information technology and exchange, Dr. Shortliffe observes, is not typically a specific part of medical education.

In his article, "Biomedical Informatics in the Education of Physicians," Dr. Shortliffe writes that knowledge management is key to clinical decision-making and yet "a coherent approach to information and knowledge management and their application has generally not been part of medical education." He identifies and defines the formal discipline missing from medical school curricula: biomedical and health informatics, defined as "the interdisciplinary, scientific field that studies and pursues the effective uses of biomedical data, information, and knowledge for scientific inquiry, problem-solving and decision-making, motivated by efforts to improve human health."

Biomedical informatics has four major areas of applications, Dr. Shortliffe writes: bioinformatics, encompassing molecular and cellular processes; imaging informatics (of tissues and organ systems); clinical informatics, which relates to individuals and patients; and public health informatics, which focuses on populations and society (e.g., disease

control, epidemic surveillance, [vaccine development](#)). More specific subareas also contribute to the major applications: nursing informatics, pharmacogenomics, and consumer health informatics, to name a few.

Dr. Shortliffe observes that medical students need to learn both the practical applied side of informatics and the core concepts that will remain valuable throughout careers practicing medicine or conducting research in the computer age. To function successfully as physicians, medical students also need to learn about the value and role of online bibliographic databases, the role of order-entry systems, electronic health records, regional data exchanges, telemedicine and other current informatics applications in health and medicine, says Shortliffe.

"Biomedical informatics is not a topic that is optimally taught in a single course during the preclinical years," says Dr. Shortliffe, "but rather should be blended into the four-year curriculum. . .with the use of clinical examples and challenges to motivate and direct the grasp of informatics concepts."

Provided by American Medical Informatics Association

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