

Caring for the whole person -- using systems medicine

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At a time when medicine tends to focus on patients as a "collection of visceral organs and a nervous system," systems medicine provides a new approach to medical practice that is "anticipated to result in more comprehensive and systematic patient care." In a commentary published today in the *Journal of the American Medical Association* (Sept 2), Howard J. Federoff, MD, PhD, executive vice president for health sciences and executive dean of the School of Medicine at Georgetown University Medical Center, and Lawrence O. Gostin, JD, associate dean at the Georgetown University Law Center ask, "Is there a future for systems medicine" particularly as the country considers a health care overhaul?

Federoff and Gostin define systems medicine as a holistic approach to a patient's care that incorporates the basic tenets of evidence-based medicine along with the interactions between all components of health and disease including [human genetics](#), environment and behavior.

"The progressive shift toward prevention mandates a different economic model and a repositioning of individual and clinician responsibility for wellness," the authors write.

In fact, at Georgetown University Medical Center, Federoff is leading a comprehensive shift in the focus of research and medical education to incorporate a systems-medicine approach. It's a change that has already influenced the medical school curriculum.

Still, Federoff and his colleague, Gostin, acknowledge the critical concerns raised by systems medicine because of the vast and comprehensive information that will be collected about all patients.

"Although a holistic approach to medicine should benefit patients and society, consideration of the sociolegal, ethical and economic implications is essential," the authors write.

Such considerations for implementing systems medicine include its cost, the privacy of patients, protecting patients against discrimination (health insurance, employment and education) and ensuring equal access to health care for all.

Implementing systems medicine will have "significant upfront costs." Federoff and Gostin say "The economic savings, therefore, may not be realized until well after implementation of this model." And they add that the development and use of new therapies based on this approach could increase costs.

"The collection of personalized information would include treatment and responses, lifestyle (eg, sexual habits, diet smoking and drug use), genetic profiles, environmental factors and family history," requiring a significant focus on the ability to safeguard the data. In addition, using this information to develop personalized medicine could potentially make patients more vulnerable to discrimination.

The authors express concern regarding the impact of systems medicine on equal access to care noting that some barriers could "exacerbate existing disparities in access to quality care..."

Finally, in exploring the sociolegal implications, Federoff and Gostin examine the implications of systems medicine on medical education and practice. While acknowledging that the world of medicine may not fully

be prepared for a shift to systems medicine, the authors point out such a shift "is anticipated to result in more comprehensive and systematic patient care in an economically sustainable fashion."

Overall, the authors conclude, systems medicine "promises greater precision in diagnosis, opportunity for earlier intervention, risk-based prevention, individualization of care and optimization of the patient-clinician interface." But, they say, there are many critical factors to take into account.

Source: Georgetown University Medical Center ([news](#) : [web](#))

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