VIEWPOINTS

Personalized Medicine: Are We Preparing Our Students for the Knowledge Revolution?

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Personalized medicine uses a patient’s individual data to make decisions tailored to their specific wants and needs. In the *The Decision Tree*, Thomas Goetz describes how patients can be taught to make their own personal health strategy based on the “best practices of genetics, behavioral medicine, information technology and each other.”

An increased desire by patients to be true partners in their health care decisions and the shift towards encounters and disease monitoring taking place outside the doctor’s office or hospital are advancing personalized medicine initiatives. *The Innovators Prescription* describes a solution to decrease health care costs and increase access by using wireless medical devices, wellness programs, telehealth, medical homes, and retail clinics to deliver health care.

So how do we prepare pharmacy students to partner with their patients in a decentralized, technology-driven, and more-personalized environment, while keeping a human touch? Fortunately, pharmacy accreditation standards already mandate that graduates be able to provide patient-centered and population-based care. However, strategies to deliver that care are changing and curriculums must keep pace. This viewpoint focuses on 2 areas for consideration as we continue to prepare students for new models of health care delivery.

The Power of Shared Experiences

Patients are increasingly comfortable sharing personal health information on social media sites and using the shared experiences of others with similar conditions to aid in their decision making. The popularity of Patients Like Me (http://www.patientslikeme.com) and other patient-centric Web sites cannot be ignored. Pharmacy educators can discount information that patients post and read on these sites because it was not gathered in a systematic way using elegant research methodology, or we can recognize that these sites have another purpose. Patients may describe concerns on these sites that are very different from what they would tell a pharmacist or student pharmacist in a clinical setting. While established key counseling points are important, they could miss the mark and contribute to patient nonadherence. Additionally, these sites can become repositories for large data sets, which some researchers see as a new and rich information source to better understand and manage diseases. Online communities augment but do not replace health care professionals, as patients still value providers for their diagnostic ability, technical knowledge, treatment planning, and importantly, empathy and support.

Pharmacy students must be comfortable determining how patients use social media in their decision making in order to gain trust and address their real concerns. They should understand the power of personal relationships that, in concert with online support, can invigorate patients to improve their health status.

New Data Sources

High-speed Internet access is increasingly mobile because of smart phones and other wireless devices, making it easier for patients to collect personal health data at any time and from almost any place. The endless array of Web-based tools and Internet compatible devices that gather and share objective data (eg, blood glucose) and observations of daily living (eg, subjective data such as sleep, appetite, pain, or mood) capture ongoing, real-time information that health professionals have not had access to in the past. The data generated from these tools allow patients and providers to more easily fine tune treatment regimens and identify a recurrence or relapse sooner than with periodic provider visits. Pharmacy students need to be comfortable with helping patients select the best devices and tools that capture meaningful data, incorporate those tools into an overall care plan, understand the results the generated, and make data-based decisions that improve outcomes.

Personalized medicine allows pharmacists to practice true patient-centered care as they help patients learn what they really want to know about their treatment instead of just what pharmacists think is best. Having more complete data when pharmacists meet with patients allows them to make better treatment decisions. Personalized medicine empowers patients and empowered patients are more likely to engage in activities that improve their outcome. Improved outcomes is always the goal pharmacists should seek. The 2007 Argus Commission Report described the “Knowledge Technology Revolution” as a top challenge for academic pharmacy. The Report stated...
that pharmacists must be able to “interpret complex data and translate the information into applied knowledge and strategies for prevention and treatment of disease.” The time is upon us to educate our students to be effective practitioners in a world of personalized medicine. To quote Johann Wolfgang von Goethe: “Knowing is not enough, we must apply. Willing is not enough, we must do”.

REFERENCES