Clinical informatics: What medical students, residents should know

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As a physician, you will work to improve the health and well-being of individual patients. In the era of big data, however, there are career options that allow for transformative care on an even broader scale.

Clinical informatics is a growing career field that offers medical trainees the chance to implement solutions on a macro level. For those medical students and residents with a nose for numbers, here are answers to a few questions you may have about working in informatics.

Why does health care need informatics?

With electronic health records (EHRs), physicians have access to more data than ever. Many people working in health care, on both the clinical and system levels, are not properly trained to interpret it.

“The availability of information about individual patients, groups and populations has never been higher,” said Titus Schleyer, DMD, PhD, a professor of biomedical informatics at Indiana University School of Medicine (IUSM). “When you look at the volume of information that is stored in electronic health records and other systems—10 or 20 years ago, that was on paper. For practical purposes, you couldn't analyze it. You couldn't access it. You couldn't do anything with it.”

How can you train in clinical informatics?

Clinical informatics—the study of health information and data to improve patient care—was declared a new medical subspecialty and 456 physicians were board certified in 2013. With more than 25
programs accredited by the Accreditation Council for Graduate Medical Education, it has grown substantially since then. The number of physicians certified in clinical informatics in the U.S. surpassed 1,100 as of January 2016.

In addition to post-residency fellowships, there are also pre-doctoral programs that terminate with a PhD. One example of such a program is a collaboration between the Regenstrief Institute, IUSM and the Richard M. Fairbanks School of Public Health at Indiana University-Purdue University Indianapolis.

That program aims to give trainees the tools to make sense of big data while working in a broad spectrum of entities across the health care industry. Physicians—who bring an in-depth knowledge of the operational parameters and constraints of a clinical environment—can make a unique contribution.

“A physician practice spends quite a bit of its resources on putting data into the electronic health record and other systems,” Dr. Schleyer said. “But what we haven’t done is stood up as a profession and said very loudly and clearly is that it’s time to make those data relevant and useful to physicians. Don’t just let me enter the data all day long and then somewhere somebody derives some benefit from it. Help me leverage what I produce.”

**What are the clinical informatics career tracks?**

On the whole, positions for those with extensive knowledge of big data are growing; a 2017 report by the Healthcare Information and Management Systems Society indicated that demand for health IT positions is high. Physicians with a background in clinical informatics can work in public health and health systems to help shape policy. One position growing in popularity is chief medical informatics officer.