

The Patient Will See You Now: The Future of Medicine is in Your Hands

Eric Topol, MD (author); Basic Books: New York, NY; Hard cover, 384 pages; First edition, January 6, 2015; ISBN-10: 0465054749; ISBN-13: 978-0465054749; \$28.99

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I will never look at my smartphone again in the same way after reading *The Patient Will See You Now: The Future of Medicine is in Your Hands*. The power in the average smartphone is immense, and Dr. Eric Topol has given us a technologically filled vision of the future of medicine where the consumer armed with a smartphone and a variety of biosensors takes control of their own healthcare and shifts the power away from the doctor, the government, and the large medical societies, especially the American Medical Association. The major theme of this book is the dynamic impact that new health related technology will have on the practice of medicine in the near and long term. An intriguing and well-written book full of predictions about new technology and the future of healthcare delivery, the most remarkable thing about the book is the immense number of very specific examples, supplemented by an encyclopedic number of references supporting each claim and prediction. Based on the amount of specific information in this book about new healthcare related technologies, all physicians, medical students, and healthcare administrators would find this book interesting and thought provoking.

Dr. Topol criticizes the historical “Age of Paternalism” which dominated the practice of medicine over many centuries back to the time of Hippocrates. He compares the introduction of the smartphone as a technology as disruptive as the invention of the Gutenberg printing press was in 1440. The smartphone, and the thousands of apps available, transfers the power of knowledge to the individual. Dr. Topol proposes the concept of the “democratization” of medicine, by which he means that the patient will have all of their medical information stored in their smartphone, and will be the driver of their own medical decisions. Dr. Topol skillfully outlines his view of radical changes ahead in medicine that will occur shifting power from the doctor to the consumer.

Soon, Dr. Topol predicts in urgent and enthusiastic tones, smartphones will deliver all relevant medical data to the individual from health records, lab tests, imaging scans, various biosensors, genomic studies, etc. Patients armed with all their own healthcare data combined with information from huge central databases will control all their information and share that data as necessary with physicians. Start up companies make it possible for the individuals to have access to their own laboratory data and radiological scans. The “lab-on-a-chip”

using microelectronic and microfluidic devices combined with a smartphone for its microprocessor and display already exists, and will likely come into widespread use in the not too distant future. Direct-to-consumer genomics companies will allow consumers to obtain their own genetic profile for a cost of less than \$100. Bloodstream-embedded sensors to monitor biomarkers for various diseases are under development and will be soon commercially available. Several major modalities of medical imaging have the ability to be miniaturized to handheld size. Computers will churn through millions of journal articles and thousands of similar patients to generate the optimal treatment plan. The consumer will be able to immediately see a doctor with all this information available, and in addition have access to pricing information and quality scores about the doctor and hospital.

Dr. Topol also introduces the intriguing concept of massive open online medicine, or MOOM, which means that thousands of individuals would voluntarily contribute their de-identified medical and genomic data to a massive cloud-based database, from which consumers, physicians, and researchers could examine the health information and outcomes of treatment from thousands of patients, aiding in informed decision making about the best treatment for each individual and producing high quality research. However, at the same time, he acknowledges that safeguards for such databases are so woefully inadequate, that no one’s data are ever totally secure. Certainly until security of such databases is improved, the concept of MOOMs is interesting but not realistic.

Clearly the field of sleep medicine is already aware of many of these trends. The diagnosis of sleep apnea will no doubt continue to evolve. Rather than an expensive facility-based sleep studies, further advances in technology will lead to more options for home unattended studies, using a variety of sensors attached to a smartphone, with the results being sent to the physician wirelessly. Commercial companies have already created apps that can be downloaded to a smartphone providing night-by-night data on various parameters of sleep quality along with other lifestyle data. In the future, patients will have their own sleep oximetry or portable sleep study apps providing nightly data on sleep disordered breathing and effectiveness of treatment.

Dr. Topol writes as a high-tech enthusiast and is prone to the hyperbole often found in the future-prediction genre heralding the incredible benefits of the new world to come. While clearly an optimist about the role of new technology, he may overstate the benefits from new technology, and in doing so seems to devalue the role of the well-trained, careful physician or nurse guided by years of experience and a compassionate view of his or her patient. While there are unquestionably major benefits of technology, there needs to be equal concern about the unintended consequences of over-reliance or over-utilization of these technologies. The practice of medicine will always be both art and science.

All said, this is a remarkable book packed with information and references not found anywhere else, tracking the rapid pace of change in healthcare technology that will soon be available to the individual. All of us will need to evolve and adapt to the new environment.

CITATION

Parish JM. The patient will see you now: the future of medicine is in your hands. *J Clin Sleep Med* 2015;11(6):689–690.

SUBMISSION & CORRESPONDENCE INFORMATION

Submitted for publication March, 2015

Accepted for publication March, 2015

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DISCLOSURE STATEMENT

The author has indicated no financial conflicts of interest.