EDITORIAL

Medicine 2.014 – The Digital Age of Medicine

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Computer technology and social media have dramatically changed the way that people spend their time, interact with others, and acquire knowledge. In the Digital Age that we live in now, we have seen the advent of "big data" with the newfound ability to manipulate massive amounts of information. Global networks facilitate communication between geographically distant communities. The influence of these technologies on clinical medicine, termed "digital medicine", has been defined as "the transformation of health care that is coming about as computer technology is used in the creation and application of medical knowledge"[1].

Digital medicine impacts three broad areas of health care: patient care, communication, and patient empowerment. With the capabilities of medical researchers to leverage "big data", the discovery of monogenic diseases gleaned from sequencing entire genomes has made it possible for prenatal screening of various inherited disorders, including disorders of hemoglobin, which affect thousands of children in developing countries[2]. The way that doctors care for patients are also changing, as medical care is starting to be delivered digitally. Medeo.ca is a prime example of digital medicine that is emerging for residents in British Columbia; using a computer, iPhone, or iPad, patients can log in to a secure video-conferencing platform and have a provincially-insured virtual visit with a licensed physician[3]. Technological advances are also empowering patients to manage their own health. Fitbit® is one of many electronic devices that enables users to monitor biometrics, such as physical activity, giving them the opportunity to set self-directed health improvement goals and have a digital record of activity they can discuss with their health care provider[4]. Digital medicine is altering the way researchers' further our understanding of the human body, the way clinicians deliver medical care, and how patients are able to interact with the medical system.

In this evolving climate of digital medicine, it is particularly important to stay informed about existing breakthroughs, and to continue looking forward to the next advancement. One particularly notable development in digital medicine is a bloodstream nanosensor that communicates with your smartphone. The nanosensor chip is injected into the blood to constantly monitor for early markers of a heart attack, and uses wireless capabilities to send alerts to a smartphone[5]. The possibilities of nanosensor surveillance are endless, including screening and monitoring of autoimmune diseases, cancers, and strokes[5]. The ability to monitor patient health using technology as ubiquitous as a smartphone represents a novel tool for health care providers, but with it comes the ethical and logistical challenges that come with such easy access to personal health information.

This issue of the UBC Medical Journal (UBCMJ) highlights the increasing use of technology in the field of medicine, and the potential impacts of utilizing social media as a means of health care communication. Our feature articles explore the potential for electronic health strategies to optimize patient care and physician competency (Ho), and highlight the importance of medical technology as a means of transformative change (Pawlovich). Our other articles include an insightful interview with Dr. Kevin Pho (founder of www.kevinmd.com) that provides recommendation for physicians on maintaining an online presence (Dhillon), and the use of

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open-source software in medicine (Toom). In addition, Dr. Stan Bardal sheds light on the UBC Formulary App and its potential in the context of medical education and patient care (UBCMJ Staff).

Health care professionals are expected to engage in lifelong learning; therefore, it is necessary to evolve and follow the trajectory of technological advancements in society. In today's digital age of medicine, health care professionals must be resourceful and humble enough to accept the limitations of personal knowledge. Physicians need to be effective team players in order to use communication technology to collaborate with other physicians and involve patients in more aspects of their care as they are empowered by technology to do more for their own health. Health care workers must also be able to adapt and embrace changing practice paradigms and technologies. However, it is important to note that in many cases, technology does not replace older tools, but rather augments them (eg. the function of laboratory tests and imaging is complementary to a thorough history and physical exam). Therefore, we must continue to use our knowledge, talents, and efforts in combination with the new tools of digital medicine to keep patient care at the forefront of medical practice.

We hope this issue of the UBCMJ adds to the expanding wealth of knowledge in this area of medicine and offers our readers some insight into the technological advancements that aim to improve quality of patient care through changes at the system and provider levels.

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