Chapter 5
The Computer-Assisted Patient Consultation:
Promises and Challenges

Aviv Shachak
University of Toronto, Canada

Shmuel Reis
Technion- Israel Institute of Technology, Israel

ABSTRACT

The implementation of electronic health records (EHRs) holds the promise to improve patient safety and quality of care, as well as opening new ways to educate patients and engage them in their own care. On the other hand, EHR use also changes clinicians' workflow, introduces new types of errors, and can distract the doctor's attention from the patient. The purpose of this chapter is to explore these issues from a micro-level perspective, focusing on the patient consultation. The chapter shows the fine balance between beneficial and unfavorable impacts of using the EHR during consultations on patient safety and patient-centered care. It demonstrates how the same features that contribute to greater efficiency may cause potential risk to the patient, and points to some of the strategies, best practices, and enabling factors that may be used to leverage the benefits of the EHR. In particular, the authors point to the role that medical education should play in preparing practitioners for the challenges of the new, computerized, environment of 21st century medicine.

INTRODUCTION

Mrs. Jones is a new patient to the practice who has come in for a certificate that the local gym requires for enrollment. She is 50 years old, married and mother of two, who works as a high school teacher.

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Dr. Smith introduces himself, welcoming her to the practice. He asks for her USB memory stick, and her cumulative electronic health record (EHR) pops-up on his screen, indicating no significant health concerns. Her family tree (genogram) is also generated and is displayed. Dr. Smith asks "anything else?" and she answers that she would like to be informed about needed health promotion advice. Her family

history contains the existence of heart disease (coronary artery disease) and breast cancer. Her life style is generally healthy. Dr. Smith performs a focused physical examination, and hooks her up to the multi-task physiological monitor that gives, within 90 seconds, a reading of her blood pressure and pulse, electrocardiogram, and lung function (spirometry) - all are normal. Since she had laboratory tests three months ago as part of a woman's health program she follows, Dr Smith shares with her the results of her cholesterol test (hypercholesterolemia or a high cholesterol level). The EHR automatically generates the recommended screening and health promotion recommendations for her age and risk status, which he explains, and then goes over some patient education materials that appear on the screen that he shares with her. Finally, she asks his opinion about the future consequences of her ten year old infection of the abdomen's inner lining (peritonitis) and a subsequent surgical procedure to explore it (laparotomy). The doctor does not recall any, but he sends a query through the Inforetriever (a program for updated sound medical information retrieval) on his desktop. When the evidence-based answer arrives 15 seconds later, he is able to share it with her. All the generated materials are beamed to her cell phone and emailed to her, together with the certificate.

Throughout the encounter Dr. Smith has been applying the patient-doctor–computer communication skills he had trained in six months ago at the national simulation center. The subsequent results of her age and risk appropriate screening arrive at his desktop (and hers) automatically within the next week. Dr. Smith interprets the results for her and sends them over the encrypted office email. Mrs. Jones also shares her exercise and diet program data electronically, and he monitors those. Three months later, a new cholesterol screen indicates that she has much improved. A week later Dr. Smith receives the annual report of his performance: the clinical quality indicators and patient safety monitoring show another 5 point improvement. The patient satisfaction survey is at its usual high. When Dr. Smith sits to plan his next year needs-based goals for his continuous learning plan he chooses tropical and poverty medicine. The bonus he will receive will enable him to finally choose the medical relief to Africa he has been hoping to accomplish for some years now.

To some readers, the above scenario may seem imaginary. However, the technologies which enable it have already been, or are being, developed. As this scenario demonstrates, the application of information and communication technology (ICT) in health care holds the promise to improve quality of care, as well as opening new ways to educate patients and engage them in their own care. However, there are also many challenges involved. In this chapter, we will review the present literature on the benefits of the computerized consultation, as well as the challenges and problems associated with it. We will discuss the fine line between benefits and risks of using the EHR during consultations, and demonstrate how the same features that contribute to efficiency may pose a risk or interfere with patient centeredness. Finally, we will discuss some of the strategies, best practices, and enabling factors that could enhance realization of the vision. In particular, we will point to the role that medical education should play in preparing practitioners for the challenges of the new, computerized, environment of 21st century medicine.

BACKGROUND

The potential and actual outcomes of ICT in health care are often discussed at the systems level. In particular, impacts on quality of care and patient safety of ICTs such as the EHR, computerized provider order entry (CPOE) and clinical decision support systems (CDSS) have been examined. Table 1 describes these and some other commonly used clinical information systems. Although the