Introduction
A Visit to the Doctor: Three Scenarios

Scenario #1

Dr. Jennifer Hathaway, a primary care physician in a suburb of Chicago starts her day with 25 files piled on her desk, representing the 25 patients that she will see in the next eight hours. Her first patient is Eleanor, a healthy 45-year-old woman, who works as a software engineer. Eleanor is waiting for the doctor in the examining room after Dr. Smith's medical assistant has taken her vitals and weight, draws blood and does an EKG, which she attaches to Eleanor's chart. Eleanor has also filled in an update form that has been placed at the front of her chart.

Dr. Hathaway enters the examining room, carrying Eleanor's file. She gives it a quick glance noting Eleanor's weight, blood pressure, and a note about headaches. She greets Eleanor, shakes her hand and warmly welcomes her back for her annual visit, observing stress in Eleanor's face and a slight tremor in the handshake. Eleanor has been a patient for the past 10 years, and they banter back and forth about her general health and her family. While examining Eleanor, Dr. Hathaway asks about any new issues or changes, as she has not had time to read the update form that Eleanor filled out. When she is finished Dr. Hathaway suggests that Eleanor get dressed, and meet her in her office.

While she is waiting for Eleanor, Dr. Hathaway quickly reads her update form and skims through her record, seeking information from the last visit. As they talk Dr. Hathaway takes copious notes in longhand. She tells Eleanor that her blood pressure is quite high compared to a year ago and suggests that could be the cause of her headaches. She recommends that Eleanor start a hypertension medication and have a stress test. She writes out prescriptions and slips for lab work, which she hands to Eleanor, reassuring her that there is nothing to worry about.

After the visit, Dr. Hathaway collects and reviews all of Eleanor's labs and test results and within a couple of weeks she sends Eleanor a note indicating that her stress test and other blood work is normal, but her cholesterol is high. She encloses a prescription for a cholesterol medication and tells Eleanor to call if she has questions.

Unfortunately, the cholesterol medication makes Eleanor dizzy so she calls the office the next day and leaves a message. Dr. Hathaway calls her back, but Eleanor is not there. It takes three days and two more rounds of telephone calls before the doctor and

Eleanor connect. Dr. Hathaway tells Eleanor to immediately stop what she is taking and indicates that she will call a new drug into the pharmacy. There is no further communication between Dr. Hathaway and Eleanor until her next visit six months later.

Scenario #2

Dr. James Thatcher, who practices general medicine in a community just outside Atlanta, GA, is proud of the fact that, after much time, expense, and energy, his office has installed a new computer system with electronic records for all of his patients, a medications database, and e-prescribing capability. Dr. Thatcher and his staff spent a weekend in training to help them use and understand the new computer system.

When his patient Dan, a retired 80-year-old contractor with asthma and high blood pressure, comes in for his six-month visit, he gives his medical card to an office attendant, who looks up his patient record on the computer and confirms his identity and birth date. Dan is still asked to fill out a paper update form that he struggles with as he tries to remember all of the dosages for his medications and recall his family medical history.

As Dan enters the exam room, Dr. Thatcher is at the computer reviewing his electronic medical record (EMR). They talk for a few minutes and after examining Dan, the doctor notes the start of a bronchial infection. While Dan waits, Dr. Thatcher searches his new medication database to find the right antibiotic to treat Dan's bronchitis. The computer returns with a list of three medications that would be appropriate, and flags one of the medications that Dan's health plan will not accept. The doctor makes his choice and electronically transmits the prescription to Dan's local pharmacy where the computer prints a concise set of instructions including a warning on potential side effects and directions about how Dan should take the drug.

Once again Dr. Thatcher turns his attention to Dan and together they review Dan's electronic medical record on the computer and discuss some of the most recent entries. Dr Thatcher prints a list of web links where Dan can find information about the new prescription and other medical issues. Dan's prescription is waiting when he arrives at the pharmacy on his way home.

Scenario #3

Anne Downes is a primary care physician in Minnesota, who has always been intrigued with technology and early on adopted an electronic medical record as her way of keeping patient charts. But Anne is not satisfied with having a static set of patient records online. She believes in using technology tools for patient communication and seamless interaction between her prescribing systems, billing systems, health insurance providers and the hospital where she has admitting privileges.

When Dr. Downes' patients are scheduled for an office visit, they must do some of the preparatory work ahead so that she is able to devote 100 percent of her focus and time to talking, examining, and listening to her patients.

Donna is a 57-year-old teacher with chronic diabetes and arthritis. Donna sees Dr. Downes every four months. Ten days before her scheduled visit, Donna receives an email from Dr. Downes with a link to the portal that Dr. Downes shares with her patients, reminding Donna to go to her private section of the portal and enter her most recent blood sugar readings from her glucometer. The readings are automatically graphed by the computer and available for Dr. Downes to review before the visit.

When Donna arrives at Dr. Downe's office, she goes directly to a computer terminal where she scans her medical card. This automatically notifies the office staff and Dr. Downes that she has arrived, and brings up Donna's electronic health record. Earlier in the day, an automated computer program sent a checklist of all the patients scheduled to Dr. Downe's PDA. From that device she is able to access Donna's record and determine the agenda for their visit.

When she arrives, Donna is escorted to an examining room where a nurse takes her blood pressure, weight, and other vitals and keys the information directly into Donna's health record on the computer. She leaves that screen visible for Dr. Downes. Having already seen Donna's record and her latest entries on her PDA, Dr. Downes is able to look very quickly at the computer screen to assess Donna's condition. As a result, during the 15 minutes allotted to the visit, Dr. Downes is able to focus completely on Donna and concentrate on their discussion without the distraction of having to write notes or look up information. Donna explains that she has been experiencing pain in her shoulders and tingling down her arms. Dr. Downes recommends that she should see a neurologist who will run some tests. She also prescribes a new diabetes medication.

At the conclusion of the visit, Dr. Downes takes a few minutes to send a prescription directly from her computer to the pharmacy; an email to a neurologist with a note about Donna's symptoms; and to post links to Donna's patient portal site. The computer automatically transfers all the information about the prescription, the symptoms, and the referral to the neurologist to Donna's electronic health record. Dr. Downes reminds Donna that if she has any questions she can send her an email. She feels satisfied that although her time with her patient is limited, these digital tools provide her with information and communication that enables a comprehensive, unrushed visit.

As she leaves the office, Donna goes to a kiosk where a computer survey is on the screen that asks questions about Donna's satisfaction with the visit. With this information Dr. Downes is able to make adjustments to the flow of the office visit to achieve patient satisfaction. When Donna has time, she brings up the portal on her computer to research the side effects of the new medication, schedule an appointment with the neurologist and review her lab results.

Communication between doctor and patient that fosters information exchange and sets up proper expectations plays an important role in developing a trusting relationship, which correlates to the outcome of care. For centuries, hastily written notes taken during an office visit have made up a patient's health record and provided the basis for a treatment plan. Communication flow from doctor to patient began with a face-to-face meeting or a telephone conversation when the patient explained the problem and the doctor listened and then issued orders. There was little opportunity for discussion, questions, or debate. The fact that a doctor's decisions did not include much input from the patient seemed totally appropriate because most

patients believed that their doctors were trained in medical school to make the right decisions for them.

In spite of the availability of the technology, not much seems to have changed. Well over two-thirds of doctors' offices use the same methods for recording and keeping patients records as they did 50 years ago, which is to say files full of paper and rooms filled with X-ray film. Most of those same doctors are still communicating with their patients via telephone and postal service.

Millions of doctor office visits occur every day across the world, and an intricate patchwork of information from providers and payers is processed for each visit. The records are on paper or housed in computer systems that typically have limited ability to exchange data electronically. And because those visits are only one aspect of healthcare that the individual experiences, the paperwork mounds in isolated files held by a myriad of medical professionals, including pharmacies, hospitals, labs, physical and occupational therapists, alternative medicine practitioners, dentists, specialists of all types, insurance companies, and private databases. These are typically files that did not communicate with one another.[1]

Scenario #1 depicts the traditional office visit that is infused with warmth and familiarity but lacking in communication between doctor and patient. Much of Eleanor's office visit time is spent watching the nurse and the doctor record information in her paper chart and ask questions about issues that she had already supplied on the update form. Facing lots of new problems – high blood pressure, high cholesterol – Eleanor has questions after her visit with no easy way to have them addressed. She resorts to an Internet search but is not quite sure about the reliability of the information she finds.

Scenario #2 depicts an office that has newly adopted communication technology to supply the doctor with quick answers and reference points. However, this office is not using these tools to foster better communication between the doctor and his patient. Dan still has the frustrating task of filling out an update form and trying to remember all of the important details of his medical history. During his visit, there are many awkward moments when the doctor is focused on the computer and not on Dan. Links to information resources are on paper and not the live links that patients are used to using.

Scenario #3 illustrates how use of communication technology (patient portal, email, PDA) can improve doctor/patient interaction during the office visit. Marie does not mind spending a few minutes before her visit updating her record on her patient portal. It is certainly better than filling in an update form. With the advance information sent to her PDA and the nurse's posts to the computer, Dr. Downes is able to give Donna her complete attention without the distraction of having to take notes. Email is the frosting on the cake that gives Donna a general sense of being well cared for, and gives Dr. Downes a sense of providing the best care available.

The twenty-first century healthcare consumer, who is an avid user of the Internet, email communication, and digital information, realizes that there is more to patient

[1]The Markle Foundation and the Robert Wood Johnson Foundation July 2004

care than engaging in a hurried conversation and receiving instructions from a qualified healthcare professional. With the availability of health information from print media, television, Internet resources, books, magazine articles, patients have high expectations that their healthcare experiences will include greater participation, two-way discussion and a means for follow up if they have questions. Patients want their experience with a physician to be warm, reassuring, and satisfying. They expect their doctors to be good listeners and to suggest appropriate information resources that help them learn more about treatments and options. Patients have a low tolerance for doctors who allow the telephone to interrupt them, who dismiss their ailments as incidental, and who avoid confronting difficult situations. They expect their physician to ask relevant questions and, through eye contact, body language, tempo of speech and tone of voice, to imply that this discussion has their full, undivided attention. That means no writing in paper charts and no typing on the computer.

Tommy Thompson U.S. Secretary of Health and Human Services from 2001–2005 stated during his tenure "grocery stores are more automated than the doctor's office." It is shockingly clear that the healthcare industry has lagged behind every other institution in deploying simple communication tools, email, cell telephones, personal digital assistants, text messaging and the Internet, that people use everyday in their home and work lives.

One of the ways that health information technology can be most effective is in generating reminders to patients about taking medication on time and all the time, and providing comprehensive, but understandable information about what a medication treats and how to properly administer it. Studies have proven that over 50% of individuals taking medication take their prescribed medications intermittently or discontinue them altogether. Forgetfulness, confusion about how to take a medication or why it is necessary, inability to pay for the prescription are all the reasons cited when patients are asked why they are not adhering to their doctor's instructions. Somewhere along the way, there is miscommunication when patients report that they are unclear about why they are taking a particular medication or why it is necessary to finish all the medication in the bottle once they are feeling better. Without a direct channel of communication to the doctor to clear up their confusion, most of the patients' failure to adhere compounds their problems. The telephone, with its frustrating tag is not an answer. Email with its fast response mechanism and the ability to provide live links that direct the patient to Websites that explain a medication and the reasons why it is important or offer comments by other patients suffering from the same condition can be an effective way to promote better adherence.

Over 40% of the American population has at least one chronic health condition (defined as a medical problem that lasts a year or longer, limits what a person can do, and requires ongoing care). Twenty percent have two or more such conditions and millions more are officially disabled. An individual practitioner or small group practice, using paper records, is not well equipped to care for these patients. They do not have the support staff, time, or tools to work with the patient and the family. Their medical record system is cumbersome and information is hard to access, making it difficult to track patients and provide them with the education they need.

The demands of a physician's daily practice make it difficult to reorganize and train staff in new communication tools such as electronic health records and patient portals, or to keep up with the latest discoveries, disease threats, and devices designed to help a physician offer twenty-first century quality medical care. There are no quick fixes. However, it is incumbent upon healthcare professionals to arm themselves and their patients with as much information as possible. This can be accomplished with current technology that enables access to vast information resources.

Digital Communication in Medical Practice is a guidebook that provides a quick comprehensive overview of the tools available to every practicing physician. The book illustrates how proven communication technology – the computer, email, PDAs, and the Internet can help doctors address the crunch of too little time, too many patients, and too much information. Authors, Nancy Finn, technologist and Bill Bria, doctor medical informatics expert, and communications expert spent two years talking with the early adopters, heads of medical institutions, private practitioners, insurers, employers, policymakers, and especially patients. The result is a book that focuses on how Electronic Health Records (EHR) and Personal Health Records (PHR) digitize patient information and make it easier for doctors and patients to collaboratively view and add data to the health record for continuity of care. This book discusses the convenience of using email and patient portals, to offer advice about post surgical care, nutrition, changing a medication, or discussing lab results. It points out how eliminating telephone tag and incorporating email and Web communications can result in less frequent office visits for those things that can be handled with a quick response, giving the doctor more time to see patients who truly have a need to be seen, and enabling the physician to have a more collaborative relationship with all patients.

Digital Communication in Medical Practice also discusses concerning issues of security, privacy, and healthcare quality, and outlines the legislative initiatives that have been passed to protect healthcare information from unauthorized entry. The book delves into perplexing, but critically important questions about the high cost of healthcare services and how various payment structures impact the doctor's ability to be paid a fair wage for professional services. The authors discuss how the Internet with its vast information resources quickly and efficiently enables physicians to find answers that result in better healthcare choices for patients. This book outlines how practitioners in remote locations can log onto the Internet, and, with simple tools such as telephones with cameras attached, can consult with super-specialists at major medical centers. It describes how homebound chronically ill patients can have their vital signs monitored 24/7 over the Internet. The inclusion of many anecdotal stories, using fictional names and settings, but based on real patient experiences, and case studies illustrates how these communication tools or the lack thereof can make a significant difference in treatment and outcome. A medical professional reading this book will come to understand that the introduction of digital communication into a practice including electronic health records, use of the Internet, e-prescribing, telemedicine, and other technologies will save time, money, and most importantly will reduce critical medical errors and thus save lives.

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