Using Information Technology to Improve Patient Care and Communication: A Practical Guide—Part 1

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Information technology may be able to help you improve the efficiency of four aspects of your practice: patient care and communication, financial management, clinical practice/operations, and professional growth. Patient care and communication is every physician's priority, so let's start there. Future articles will cover the application of technology to professional growth and other topics.

Throughout North Carolina, practices of all sizes already use information technology for pre-registration, appointment reminders and requests, on-line bill payment, test reporting, patient education, on-line physician-patient communication, and the coupling of patient specific information with options for diagnosis and treatment. The practices that are most satisfied with these applications of technology to patient care and communication have carefully analyzed their work flow, identified specific problems that they want to correct, looked at technological options, selected solutions to meet their needs, and begun to document a positive impact on patient satisfaction, operational efficiency, and cost.

For many reasons, however, most practices don't use technology for patient care and communication. Some practices are opposed in principle to any mechanism that changes their existing methods of care and communication. Other practices have preconceived notions about prohibitive costs, lack of time to investigate available options, and vendor inability to customize available tools to meet their unique needs.

In Part 1 of this article, I hope to present a practical guide to help you understand ways in which information technology may be able to help you improve patient care and communication in your practice. I want to direct my comments particularly to those of you who are in smaller and solo practices and who may, for one reason or another, question the value of technology for your patients and for yourselves. I describe common applications and suggest steps you can take to determine if information technology can help you.

In Part 2 of this article, which will appear in the next issue of the *Forum*, I will present several short profiles of medical practices throughout the state that now use technology to impact patient care and communication. Read these descriptions to learn what your colleagues are doing, what challenges they face, how they make their decisions, and how they monitor their success in meeting their goals. And, since patients come first, I will also include comments from several patients of physicians who have adopted the use of technology to improve patient care and communication.

The Value of Patient-Centered Care and Communication

Most discussions of information technology as a tool to improve patient care and communication focus on the technology part of the phrase. Information technology triggers a gut reaction related to the bells and whistles of hardware and software. It's easy to ignore the underlying premise.

Dr Larry Weed, a well-respected medical educator whose approach to patient-centered medicine has influenced thousands of physicians, offers a relevant perspective. "From both clinical and economic perspectives, patients and their families are the most neglected and the most important actors in the healthcare system." (Weed and Weed, 1994, and Weed, 1997). Dr Weed suggests that "properly designed information tools" can enable patients to "engage in an informed 'conversation' with providers and assume a greater role in their own care than in the past." Following Dr Weed's reasoning, physicians should care about patient communication not only because patients are better informed and more demanding than they used to be, but because active patient involvement in the delivery of medical care produces better decision making.

"Most practices don't use technology for patient care and communication"

Common Applications of Technology to Patient Care and Communication

Let's explore ways in which information technology can enhance patient care and communication by looking at some of the common applications: pre-registration, appointment reminders and requests, test reporting, patient education, on-line physician-patient communication, and coupling patient information with diagnosis and treatment options.

(1) Pre-registration

Most medical practices gather information about patients both at the point of check in and again when the patient goes to the examination room. Here's a

common scenario. Patients check in at the front desk and fill out a paper form that includes a review of systems, a history of present illness, and insurance coverage. They then move to an examination room, where a nurse or other clinical assistant takes vital signs and asks questions about presenting symptoms. The physician then talks with patients, does appropriate examinations, and if no further tests or services are needed, suggests appropriate courses of treatment. Depending on the office system, when the physician and patient interact directly, the physician may or may not have the information that has thus far been collected by the front office staff and by the nurse or clinical assistant.

With computerized, on-line pre-registration, your patients can have a very different experience. They use a secure line to input information into your practice's system from a home terminal or from a terminal or other device that is located in your office. They have time to review and check what they have entered. Elderly patients can ask family members to verify the accuracy of their entries.

By the time your patients reach the examination room, you already have their background and insurance information. You request additional information as needed. You enhance interactions with your patients by focusing on possible causes and treatment options. From your patients' perspective, satisfaction improves because you have more time to talk about the information that has already been collected. The practice saves the costs of dictation and transcription. You and your colleagues reduce the length of time that you spend with each patient without sacrificing quality. Because your staff validates insurance information prior to the visit, your practice can reduce the volume of claims denied because of incorrect payer data.

"Several technology applications can improve patient education"

(2) Appointment Reminders and Requests

Many practices give patients the option of receiving automatic telephone reminders of appointments instead of personal reminder calls from staff. If the practice already has a computerized scheduling system, the automated reminder system can be linked directly to it. Using either a computerized telephone dialing and message system or an e-mail reminder, the system alerts patients to upcoming appointments and tells the practice which patients have not been contacted. Patients receive their reminders on a timely basis, and the practice can reduce the number of no-shows.

Another automated appointment feature allows patients to request appointments. Patients call in or use the practice Web site to request an appointment for a particular time and date, and the practice responds. Patient satisfaction increases because calls about appointments are not mixed in with requests for medical advice, prescription refills, and urgent care. The practice retains its ability to control the schedule.

(3) On-line Bill Payment

On-line bill payment with a credit card can improve both collections and patient communication. Although the co-payment feature of managed care has sensitized medical practices to the importance of collection at the time of services, not all patients pay when asked. As you know, many patients who have outstanding balances don't return for needed care because they don't want to experience the embarrassment of again being asked to pay their outstanding balances. On-line bill payment gives your patients a convenient alternative.

(4) Test Reporting

Automated test reporting is not suitable for all practices. If a practice has a well-organized and effective triage system that efficiently handles the reporting of test results, it may not want to consider this particular application of technology to patient care and communication.

In practices that are comfortable with automated test reporting, test results are returned to the physician so he/she can add an interpretation to the raw scores. For example, following an annual physical, you might request cholesterol and colorectal screenings. If the results are normal, your interpretation might be: "Your results on both tests look good. Keep up the good work and please use the practice's automated appointment system to make an appointment to return for your annual checkup next year." To get the test results, the patient either calls an 800 telephone number or accesses the practice Web site to enter a secure pass code. Patients like the automated mechanism because they can request results at their convenience. From a practice perspective, the test-reporting feature can reduce call volume and alert the practice when a patient does not receive results.

(5) Patient Education

Several technology applications can improve patient education. If your practice has a comprehensive and easy-to-navigate Web site, patients can use it to request information at any time of day or night. They no longer have to call the practice during business hours to get general information on services provided, physicians in each specialty, office location and directions, and flu shots. You can use your Web site to provide even more information to your patients by listing and responding to frequently asked questions, by writing and/or posting short articles on current topics of interest, and by directing patients to reliable sources of medical information.

You can also use technology to enhance patient education while your patients are in your office. One physician interviewed for this article engages his patients in Web searches during their office visits. In his opinion and mine, he's simultaneously accom-

plishing two goals, both of which enhance the care that he provides. He's gathering as much current information as he can so he can make the best possible diagnoses and recommendations. He's also telling his patients that he believes in reliable on-line sources of medical information. By demonstrating the use of specific on-line databases in which he has confidence, he's guiding his patients in their own use of the Internet.

(6) On-line Care

A recent poll of physicians conducted by The Boston Consulting Group (BCG) and Harris Interactive (*Physician Profiling and Behavior Change*, 2002) documents patients' desire to communicate with their physicians on line. According to the physicians who responded to the poll, almost 90 percent of patients want to communicate with their physicians on line, and more than one-third indicate a willingness to pay for advice. More than half indicate that availability of on-line communication would impact their choice of physicians.

Physicians who are comfortable with on-line care and communication can provide different levels of information. For example, you can direct patients with general questions to educational material on your own Web site or guide them to the Web sites of reliable organizations. Your practice can also participate in one of the many on-line medical advice sites.

Another application of on-line care is prescription refills. With prior patient consent, the system stores patients' prescription histories, possible drug interactions, insurance coverage, and formularies. You can use the Internet to fax prescriptions directly to pharmacies. If you want to charge non-Medicare patients for the service, you can do so. A potential benefit to patients is reduced waiting time for the prescription. Your practice may also save staff time and reduce its operating costs (Ennis and Maus, 2001).

Going one step further, you can respond to patient-specific questions on line, reserving the right to ask the patient to come to the office for a visit. Depending on your philosophy of billing for on-line care and rules for Medicare patients, you can activate a mechanism that lets you charge for services rendered, provided that guidelines are established in advance and that your patient signs a written waiver allowing you to bill.

With all of these e-mail applications, "the key to successfully integrating e-mail communications into medical practices is to follow carefully thought out guidelines (Blumenfeld, 2002). Make sure you establish rules in advance. The American Medical Association offers guidelines for e-mailing that can help you define parameters.

The provision of patient-specific on-line advice is not attractive to all physicians. Many do not distinguish between secure on-line advice systems and traditional e-mail. The secure systems include firewalls, encryption, and other protections; e-mail does not have these features. Several of the physicians interviewed for this article mentioned potential difficulties in managing follow-up care and the increase in malpractice risk. HIPAA (Health Insurance Portability and Accountability Act) compliance is another barrier for some physicians; they would prefer not to implement on-line care at a time when new and complex regulations are going into place.

(7) Coupling Patient Information with Diagnosis and Treatment Options

Here's yet another way in which technology can improve patient care and communication. Let's go back to Dr Weed. He talks about the limitation of all physicians, no matter how well trained or experienced, to retrieve and organize relevant information and apply logic and clinical judgment to arrive at a decision (Weed and Weed, 1994 and Weed, 1997). With the exception of new patient visits, physicians spend 10-15 minutes, sometimes less, with most patients. If technology can be used to couple each patient's history, including subjective information provided directly by the patient, with all of the possible causes and treatment options, the physician is in a position to make the very best possible recommendation for each unique patient.

"Understand your problems and define your goals"

A pediatric clinic in the Triangle already uses technology in just the way that Dr Weed suggests. The clinic is a part of a not-for-profit organization devoted to helping children and adolescents whose learning differences present difficulties in school. A multidisciplinary team of pediatricians, psychologists, and learning specialists provides assessments and recommends interventions. The homegrown technology that supports the clinicians combines information provided by families, teachers, and the child with observations and other results from a daylong assessment. The clinicians are specially trained to use the software to create an individualized profile of each child. That profile is matched against 1,000 possible interventions. The interventions are categorized, reviewed, and improved on an continuing basis. With the aid of this technology, every family receives a description of clinical findings and recommended interventions that is customized to the individual child.

Getting Started

If these descriptions of ways in which technology can improve patient care and communication in medical practices interest you and you want to learn more, here are six suggestions for starting your investigation: (1) understand your problems and define your goals; (2) identify an information technology team; (3) seek facts from various sources; (4) select one or more vendors; (5) implement the new system; and (6) measure results.

(1) Understand Your Problems and Goals

The first step is crucial, and you don't have to leave your office to do it. Information technology tools help you solve problems. They don't identify your problems, determine goals for your practice, or tell you what values are important to you and your colleagues.

As I researched this article, I posed the same question to physicians in many different practice settings: "How do you use information technology to help you with patient care and communication?" Most respondents told me about their practice management systems, electronic medical record systems, and Web-based systems. Very few told me what those systems do for them and their patients.

Start by thoroughly understanding your existing processes for patient care and communication. Analyze your workflow and collect hard data to help you understand the depth and impact of your problems. Review the results of your patient satisfaction surveys. Your patients are your focus, and they will tell you what they like and don't like. Then think about the direction in which you want to go. If you understand your current status and desired goals, you are ready to take the next step.

(2) Establish an Information Technology Team

"Technological advances now allow small practices to find practical and affordable solutions"

More than one physician interviewed for this article learned the hard way that no matter how much you believe in the benefits of technology, IT decision making is equally as challenging as organic chemistry. No matter how small or large your practice may be, it's best to take a team approach to IT planning and implementation. You need to choose the right group of people to help you assess your practice, identify problems, determine and review options, and make good decisions.

If you're a solo practitioner without an IT expert on your staff, consider engaging outside help. If you belong to an IPA, PHO, or other similar organization, see how these organizations can help you evaluate options and purchase hardware and software. Keep in mind, however, that every practice is different. When a large umbrella organization is involved in the investigation and selection process, you need to make sure you get what you need, not just what is best for the majority of medical practices in the group.

If your practice is larger, think carefully about the IT team that you form. Physician involvement is essential, since physicians will be the primary users. It is helpful to involve a physician who is interested in technology, is willing to take the time necessary to explore options, and has credibility with his/her physician colleagues. If your practice has multiple specialties, be sure they are appropriately represented, but don't form a working group that is too large to function. Include on your team your practice administrator, information technology manager, and clinical and administrative staff so you can begin to cultivate involvement and cooperation by everyone. Be realistic about time commitments.

(3) Seek Facts

Every medical practice is unique, and you are ultimately seeking solutions that meet your practice's needs. Nonetheless, as you get started, you can obtain comprehensive general information from a variety of reliable resources. Use the Internet to find relevant articles. Check with your state and local medical and specialty societies to learn what others in your region are doing. When you attend national meetings in your specialty, talk with exhibitors and with colleagues in other states.

Keep an open mind about the likelihood of finding answers that work for your practice and that fit within your budgetary constraints. Technological advances now allow small practices to find practical and affordable solutions (California HealthCare Foundation, 2002). Some of these advances are:

- Improvements in Web-based technology and Internet access that offer remote hosting and no longer require expensive mainframes and PCs. Practices that use Application Service Providers (ASPs) pay a fixed monthly rate and can avoid paying high up-front purchase costs.
- Availability of mobile computer devices that accompany users as they move from place to place.
- Modular product design that allows practices to make incremental enhancements in their technology.
- Wireless computer linking that avoids bulky cables.
- Advances in equipment design that include wireless laptop computers and handheld devices.
- Increased compatibility among applications created by changes in industry standards.

(4) Selecting a Vendor

You have many choices of vendors. As you gather information, learn to distinguish sales and marketing hype from actual capability and track record. Talk both with vendors that offer single applications as well as with vendors that can add functions to their basic packages. For example, many PMS and EMR systems now have the capability to activate additional functions that relate to patient care and communication. The California HealthCare Foundation Report referenced above includes a comprehensive list of applications and vendors categorized under three main headings: financial, clinical, and patient-focused.

Lay out your specifications in a formal Request for Proposal (RFP) so you can ask vendors to respond to your specific needs and ensure that all vendors are responding to the same set of questions. Make sure you ask about impact on patient care and communication, physicians' productivity, cost, ease of learning, and interface with your current practice management system. Check on 24-hour availability of technical

support so you can get help when you need it and avoid having your operations come to a total standstill.

Make site visits to vendors and to their other clients so you can better understand the experiences of other users. The vendors will want to accompany you on some of these visits. Take time to make additional visits on your own. During these less formal site visits, ask if you can shadow a physician who is using the technology so you can observe firsthand what happens during a physician-patient interaction. Request permission to talk directly with patients. It's important for you to get their opinions on the impact of technology on their care and on physician-patient communication.

Ask many questions about vendor training for you and your staff. You want to make sure the trainer assigned to you has the breadth of knowledge to answer a variety of questions, and that the trainer won't be assigned to another client before your needs are met.

Check vendor financial viability very carefully. Some companies won't be in business long enough to let the ink dry on your contract. Other newcomers are experiencing growing pains of their own and may have difficulty providing you with the consistent good service you want.

Finally, make sure your contract includes all the items on which you and the vendor have agreed. Read the fine print, and don't rush to implement your new systems before the details are in place.

(5) Implement the System

Once you have selected a vendor, plan the implementation down to the smallest detail. List each step to be taken, expected time, and responsibility. Expect disruption if you are converting from an existing system to a new one, and plan accordingly. Pay attention to the human side of implementation, and remember that you are dealing with physicians and staff with varying degrees of interest and ability in new technologies. Effective training programs may require individualized attention in addition to group sessions.

(6) Measure Results

Measuring the impact of your technological change is imperative. If you identified specific and clear goals for your project, you'll want to match progress against them. You're not just looking at technology, but whether or not the technology you adopted helps you solve problems in patient care and communication without having unanticipated negative side effects like lowering physician productivity and ability to generate revenue (Moore and Woodcock, 2002).

Conclusion

Information technology has great potential for improving patient care and communication in your practice. If you know what problems you want to address, involve the right people in your decision making, and are conscientious in vendor selection, implementation, and measurement of results, you may be able to improve patient satisfaction and simultaneously realize a positive impact on cost and operational efficiency.

"Measuring the impact of your technological change is imperative"

References and Recommended Reading

Alexander, A. (1999). How to Get There from Here: IT Project Management. *MGM Update* 38 (12), June 15, 1999.

Arena, J.K. (2000). Implementing an EMR with the Humans in Your Practice. ACMPE Paper, June 2000.

Blumenfeld, J. (2002). To E-Mail or Not to E-Mail Patients—That Will No Longer Be the Question. North Carolina Medical Board *Forum* 2, 2002: 10.

Brandner, B. (2002). EMR ROI and Implementation: Best Practices. *Advance for Health Information Executives* 6 (7) :30,32-35, July, 2002.

Ennis, K. and Maus, R. (2001). Kokomo Family Care: Automating the Clinical Practice. *MGM Journal* 48 (4), July/August, 2001.

First Consulting Group (2002). *Achieving Tangible IT Benefits in Small Physician Practices*. Prepared for California HealthCare Foundation, September 2002.

Hodge, R. (2002). Myths and Realities of Electronic Medical Records. *The Physician Executive* 28 (1): 14-19, January-February, 2002.

Malik, S. (2003). Patients Want To Communicate With You Online, Will Pay For It and It Influences Their Decision On Which Doctor To Select. *MD News,* March 2003.

Moore, P.L. and Woodcock, E. (2002). E-Health: Promise or Peril? How to Make Solid Business Decisions about Investing in E-Health. *MGMA Connexion* 2 (5), May/June, 2002.

Nelson, R. (2002). Information Management for the Medical Practice Administrator. *New York State MGMA*, June 27, 2002.

Rake Report (2000). Electronic Medical Record Systems. 10-15. July 22, 2002.

Weed, L.L. (1997). New connections between medical knowledge and patient care. *British Medical Journal* 315: 231-235, July 26, 1997.

Weed, L.L. and Weed, L. (1994). Reengineering Medicine. *Federation Bulletin*: 81 (3), 1994: 147 - 183.

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SUGGESTED RESOURCES

Organizations That Focus on IT

American Medical Informatics Association (AMIA) publishes a monthly informatics journal (www.amia.org).

Health Information and Management Systems Society (HIMSS) publishes a quarterly journal (*Journal of Healthcare Information Management*) and sponsors an annual conference with a large vendor exhibition (www.himss.org).

Magazines and Trade Journals

Healthcare Informatics is a monthly journal that frequently features software comparison guides (www.healthcare-informatics.com).

Health Data Management is a monthly trade magazine that publishes an end-of-year resource guide on information technology vendors (www.healthdatamanagement.com).

M.D. Computing is a monthly publication endorsed by AMIA. It includes an annual Directory of Medical Hardware and Software Companies (www.mdcomputing.com).

Physician Practice Management Organizations

Medical Group Management Association (MGMA), the professional organization for physician practice leaders, offers reference books and a research service. It holds an annual fall conference with a vendor exhibition focused on physician practices (www.mgma.com).

PhysiciansPractice.com is a source for articles on IT for physician practices. It lists selected vendors by product type (www.PhysicianPractice.com).

Professional Organizations and Societies

American Academy of Family Physicians (AAFP) offers various resources, including a vendor survey, vendor requirements, FP Net (online computer information source) and Fam-Med *listserv* (www/aafp.org).

American Medical Association (AMA) offers various resources and publications (www.ama-assn.org).

American College of Physician Executives (ACPE) offers resources, publications, and seminars (*www.acpe.org*).