Healthcare Communication Review

On Building Health Partnerships: Food-for-Thought, Practical Tips, Resources

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Modern Technology & Medical Practice: Looking Back

Modern medical technology, beginning with the invention of the stethoscope in the early 1800s, was closely followed by inventions of the microscope and the X-Ray. Today we have things like the ultrasound, 'CAT' and PET Scans, the MRI and who knows what else the future will hold? All have done much to greatly improve healthcare services.

Whether in healthcare or any other aspect of life, one huge appeal of modern technology and the science that leads to it has been the promise of knowledge – objective knowledge that is not skewed by personal views; the promise of hard facts; the promise of TRUTH. Put another way, the science behind our technological inventions promises an end to uncertainty – a notion welcomed by doctors, patients and the general public alike.

So it was that each technological invention in healthcare, further freed doctors from relying on patients' stories and descriptions of their symptoms – things that were often clouded by faulty memories or emotions. In general, then, doctors became less likely to listen to their patients and more likely to base their diagnoses on what their own eyes, ears and modern technology would tell them.

Patients have noticed this decreased interest in what they have to say and they have not been happy about it. But is there real cause for concern? If all the important answers lie in objective information and technology, aren't doctors using their time more effectively by paying more attention to that and not to what patients have to say? This is a question that deeply divides healthcare professionals and, even, some patients.

More and more doctors and other healthcare professionals, however, argue that physicians should not throw out the baby with the bathwater. That is, they say objective information is vital to healthcare, but so is subjective information which should not be ignored. Why? Because, they say, ailments may indicate a change in function of a body part (best shown by technology), but social and psychological factors (best found by listening to patients' stories) also contribute to and shape the course those ailments take. For this reason, they claim, attention should be paid to both.

There is also, of course, the sad fact that certainty has eluded us. (Consider false positive and negative test results.) Beyond that, Dr. Stanley Reiser, a physician and medical historian, in *Technological Medicine* (See Book Review, pg. 8), reports on studies that show doctors often disagree about what tests results show and mean. For this and other reasons, he states that personal views and experiences (meaning subjective knowledge) are "… *built into our inventions and our interpretations of them* (Page 29)." That being the case, it would seem that making healthcare decisions may really be matters of making educated guesses. Where that's true, making the best possible educated guess may be greatly helped by doctors and patients listening to one another.□

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From the Editor

You may have noticed that this issue of the *Review* is late. Instead of receiving it in late 2009, you are receiving it in early 2010. This is the result of a delay in the research and writing of it due to circumstances beyond our control. And so, with our apologies, we now dub it Volume 10 Number 1, instead of Volume 9 Number 2. We regret that this has happened and are taking steps to help avoid a repeat of this situation in the future. That being said, we now turn to the subject of this issue: Technology & Healthcare Communication.

One form or another of modern medical, information, and communication technologies has been used in the practice of medicine for quite a while now. Many of us have grown up taking these and the future development of newer technologies for granted. (If we do not now have the technological knowledge and equipment for curing the incurable and doing the unthinkable, we surely will in the in the years to come.) And, indeed, we probably will. But the wondrous technologies used in healthcare have been doing more than changing the way particular diseases and conditions are treated. They are also changing healthcare communication, whether between doctor and doctor, doctor and patient, or patient and loved ones. This issue of the *Review* will, therefore, look at some of those changes in healthcare communication, in the hope it will help all get the most out of them.

As usual, we hope you find this issue of value and also extend our best wishes for your health and happiness in the New Year. Be well. *Judith Greenfield*

FYI: Information Technology & Diagnoses

While the use of medical technologies for diagnosing patients has become the norm, a more controversial use of technology to assist with making a diagnosis has a small but growing following within the healthcare community – both here and abroad. The technology in question is a form of information technology. The idea behind it is that doctors (being human) cannot fully keep up with all the medical knowledge that has been, and continues to be, gained. That being the case, some companies have developed computer-assisted programs that combine patient information with a huge database of medical information and come up with a list of possible diagnoses for doctors to check.

A first round of such programs has had limited success, but two of a second-round are worth mention.[1] One is a web-based program called Isabel, co-created in England by the father of a young girl, Isabel, (who almost died because of a misdiagnosed condition), and Isabel's ICU pediatrician. See www.isabelhealthcare.com. Yet another program has been developed by an American physician who had earlier developed the 'Subjective Objective Assessment Plan' (SOAP) – a problem-oriented medical record system that is now widely taught in U.S. medical schools. His current efforts have resulted in what he calls the Problem-Knowledge Coupler (PKC). See www.pkc.com.

Criticisms of these types of programs range from quackery; to concerns about cost, the time needed to enter patient data, the time and expense of unnecessary tests to check out possible diagnoses, and to what is seen by some as the downplaying of doctors' clinical judgments. Nevertheless, each program has its backers, with a growing number of healthcare systems using them and some independent studies supporting their use.[2]

Indeed, the Isabel website, in December 2009, announced a new American Medical Association platform to make its Isabel PRO system available to doctors. And the US Department of Defense is PKC's biggest customer – signs that each agree with the argument that:

> "*A doctor working without software to augment the mind…is like a scientist working without a microscope to augment the eye*.[3]"

This very view, in fact, may be why one critic, a Harvard professor, envisions that use of such programs will be commonplace 30 years from now.[4]

[1] Do a search engine search for 'wsj.com + software for symptoms.' Also visit www.boston.com and search for 'What Your Doctor Doesn't Know could Kill You.'

[2] Do a search engine search for 'Problem Knowledge Coupler Use Pilot Project' and for 'Independent Research + Isabel Healthcare'

[3] See Note 1, 'What Your Doctor Doesn't Know…'

[4] See Note 1, 'What Your Doctor Doesn't Know…'

Modern Technology & Medical Practice: Looking Forward

Modern technology is changing the way particular diseases and conditions are treated. It is also changing the way medicine is practiced. That's because advances in information and communication technologies (ICT) are increasing the practice of Telehealth and Telemedicine. So, what are Telehealth and Telemedicine and how are they changing the practice of medicine?

Telehealth, as defined by the Health Resources and Services Administration, is:

> "*…the use of electronic information and tele-communication technologies to support long distance clinical health care, patient and professional health-related education, public health and health administration.*"[1]

Telemedicine is one component of Telehealth. Generally considered to be the provision of long distance clinical healthcare, it has been defined as interactive healthcare over distance using ICT.[2] Instead of doctor and patient needing to be in the same room, they can see and speak with one another using video conferencing over the Internet. An important key to the practice of telemedicine (resulting in the prescribing of medication, for instance) is that an actual interaction takes place between doctor and patient and that standards of care are met in this regard – even if that care is provided from a distance. A doctor who prescribes medications based solely on questionnaires completed and submitted by patients over the Internet, without having examined those patients, is generally not considered to be practicing a form of telemedicine that meets either professional or legal standards.

Two Forms of Telemedicine are *store-and-forward* communications and *real-time interactions*. *Store-and-forward* communications takes place when medical data – reports, digital images (such as CT/MRI scans), or measurements – are collected and sent to professionals in other locations. This form of telemedicine does not require the involved participants to be present at the same time. One example of store-and-forward is that of home-health-care patients who measure their blood pressure, blood glucose, or weight using telecommunication-ready equipment and then sends that information, via telephone or computer, to their home health nurse who can then get back to them if necessary. Other examples include paramedics sending information to Emergency Department personnel, or consultations among physicians.

Real-time interactions, on the other hand, do require that all involved participants are present at the same time – whether healthcare professionals and patients or consulting professionals. It also requires a computer, an Internet link, video conferencing equipment and equipment for capturing patient data such as a tele-stethoscope to listen to the beating heart. In some instances, all of this equipment resides in a "robot doctor" – a tall machine that moves on wheels, with data collecting equipment attached and a video monitor at the 'head.' The monitor, which allows the patient to see the doctor on the screen, also has an attached camera that allows the doctor to see the patient. Live interactions are used by psychiatrists, neurologists, radiologists and numerous other specialists. Perhaps most spectacularly, it has been used for long-distance surgery using robotic arms. [See below for links to videos of robotic 'doctors' and remote surgeries.]

Telemedicine, in use as early as the 1950s, has grown dramatically. Some claim it has already become part of the daily routine for all doctors while others estimate that 15% of all healthcare in America will be delivered via telemedicine by 2015.[3] The shortage of physicians is one reason for this increase in use. Other reasons are that Telemedicine has been found to improve the quality of care and health outcomes while reducing costs. On top of that, many patients and professionals seem to like it:[4]

More studies assessing the benefits of telehealth have been called for, especially regarding its affect on doctor-patient communication and relationships. While it may enhance already existing relationships, we don't yet know if it will promote or discourage the building of new relationships. Here, again, then, we may not want to throw the baby out with the bath water. As one supporter of Telemedicine advises, we should "*never underestimate the healing power of human touch.*[5]

[1] See http://www.hrsa.gov/telehealth/

[2] Visit www.hrsa.gov , search for 'Telemedicine', and click on link for MCHB Webcast, December 2006.

[3] Search for "In Healthcare Today, It's Electronic All the Way" at www.medlineplus.gov and See Note 2, slide 8.

[4] Do a search engine search for "Telehealth 101: The fundamentals"

[5] See Note 3, "In Health Care Today…"

Links to Videos of Robotic 'Doctors' and Surgeries

http://www.intouchhealth.com/GMA.htm - Good Morning America interview with Robotic 'Doctor'
http://www.youtube.com/watch?v=2twLVL_jyP4 - Long-distance surgery with doctor and patient in different countries
http://www.youtube.com/watch?v=-CGFK8B1dT4 - Robotic surgery with doctor and patient in different rooms
http://www.cbsnews.com/video/watch/?id=5328870n - Explanation of robotic surgery and questions to ask about it

Patient Education: Finding Information on the Web

Many of us have already become participants in Telehealth and Telemedicine, an important part of which is using technology to educate patients. For years now, numerous healthcare systems, government agencies, and libraries have created websites that provide the public with health information written in plain language. Even some medical articles written for healthcare professionals are accessible to the public through Internet searches. This is all part of an effort to improve patients' understandings of their conditions and help them talk with their doctors about their conditions. This is good.

The ease of finding information on the web, however, can also be bad. First, IT IS JUST AS EASY TO GET WRONG INFORMATION as it is to get right information. Anyone can post information – correct or not – on the Web. Second, when information is found – right or wrong – patients may assume it applies to them. But even right information may not apply to them. And they may also be unnecessarily scared. Or, they may decide to treat themselves without consulting their doctors. Big mistake! Medicine and its practice is complicated by the fact that each patient is unique. The progress and experience of a disease in one person is often different from the progress and experience of that disease in another. For this reason, doctors and patients **need one another** to help figure out what to do about the problem. After getting information, therefore, patients should talk to their doctors about what they've learned.

The questions here, however, are: how can patients find right information on the web and how can they understand information that is written for professionals in a language called 'medspeak?' For that, we begin at the beginning, with how to access the Internet if you are unable to do so from a home computer. Go to the public library! Most, if not all, now have computers that can access the Internet. Librarians are there to help those who don't know how to do this.

Having accessed the Internet, the next challenge is to understand the various search options and to find sites with accurate, up-to-date information. Two websites can help with that. The first is the Medical Library Association (MLA), at www.mlanet.org. Once there, click on *'For Health Consumers'* to get to a page with many helpful links, one of which is '*Medical Information on the Internet Tutorial.'* This excellent tutorial can help new and even experienced searchers of the web. Its topics include information about medical librarians, web search engines, books and journals, and more.

The MLA's link, *'Top Ten Most Useful Websites,'* lists great sites for helpful information, many of which are in both English and Spanish. Then, because sites that are not on their list may also be helpful, the MLA offers two other links for figuring out if those sites are likely to be accurate and up-to-date. The first is their *'User's Guide to Finding and Evaluating Health Information on the Web.'* The second can be found by scrolling down the MLA page and looking for '*NLM Tutorial for Evaluating Internet Health Information,'* listed under the heading of 'National Consumer Health Resources.' Finally, among the many other useful links on the MLA's health-consumer page, is their '*Deciphering Medspeak'* link, for definitions of medical words, including words and abbreviations used in prescriptions.

The second helpful website is www.Medlineplus.gov (on the MLA's top ten list). Special notice should be taken of two links on their home page. First, click on *'Dictionary',* then on *'Understanding Medical Words.'* This is an excellent visual and audio tutorial. Second, check out their *'Interactive Health Tutorials.'* These are very helpful visual and audio explanations of many different diseases, conditions and treatments. Finally, check out all their other links, as they are not only very useful, but are offered in 40 languages.□

When Loved Ones Are Ill: Online Updates for Family & Friends

Anyone who has ever spent long days caring for seriously ill loved-ones and, perhaps, other necessary business, knows that there is often no rest at the end of the day. In large part this is because other concerned family and friends call, or need to be called, for updates on how those loved ones are doing. In other words, there is no rest for the weary. It is just another chore that needs to be done. Too bad there is not an easier, less time-consuming way of communicating.

But there is! Information technology and CaringBridge have come to the rescue. CaringBridge, at **www.caringbridge.org**, provides online space that allows primary caregivers to update family and friends. Equally important, it allows family and friends to send back their own messages of love and support – all written and read at times that are most convenient for each. To facilitate this, CaringBridge has set up a system where caregivers can easily create their own web page – one that is exclusively dedicated to individual sets of family and friends. Once set up, caregivers send those they wish to update, and hear from, a link to that site. As a non-profit organization whose funding comes largely from donations, CaringBridge provides this service for free.□

Electronic Health Records: Pros, Cons, Reality

Medical Records: In the Beginning

Medical records are a very important part of healthcare services today – so important that there now is a big push to establish a comprehensive, national system of electronic health records (EHR). Because medical records have not always been an important part of healthcare, a review of its history may help readers understand this push for EHRs and why achieving this on a national level will not be easy. The following brief review – drawn from a wonderfully detailed account by Dr. Stanley Reiser (see book review on page 8) – begins with Massachusetts General Hospital (MGH). In the early 19th century, MGH led the way by starting to keep medical records, albeit rather skimpy ones. At that time, however, most other hospitals and doctors did not keep any records. It wasn't until the early 1900s that leaders in the medical profession began pushing for detailed records of patient care. Then, medical schools realized that such records would be most useful as case studies for teaching medical students. In 1915, after starting this practice and finding it very helpful, MGH began publishing "Case Records of the Massachusetts General Hospital" – now known as the *New England Journal of Medicine*.

A few years later, hospitals' medical records became important to the newly formed American College of Surgeons (ACS). Concerned with the quality of care, they decided to look at hospitals' records before deciding where to send their patients. But the ACS was greatly disappointed by the poor quality of the records they found. This led them to establish standards of care and standards of record keeping, which they then used to decide whether the care at various hospitals was good or poor. They further required hospitals to review their own records so poor outcomes of various procedures could be noted and used to prevent future errors.

But the road to widespread, comprehensive, and useful record keeping since then has been a rocky one. Practical considerations and personal attitudes slowed its adoption. Practically speaking, many hospitals were put off by the equipment and personnel costs needed to set up a system for keeping and managing a system of records. Additionally, when records were kept, their usefulness was often limited because different doctors included different information in their records and, in many instances, that information remained skimpy. Perhaps this was, in part, due to the concerns many of them had about keeping records. According to Reiser, many saw the purpose of records as being simply to trigger their more detailed memories of a particular patient's care. They were, he reported, also concerned about jeopardizing patient confidentiality as well as the time it would take to keep extensive records. But the push for record keeping continued and was eventually more fully adopted – largely because the gains in medical knowledge and technology made patient care more complicated and far too difficult to simply rely on memory.

Therefore, for a long time now, no one would describe medical records as being skimpy. But problems still exist, in large part because they often seem like a bloated scrapbook, stuffed with patient histories, primary and consulting doctors notes, nurses notes, lab slips, test reports and the like. The resulting chaos, Reiser tells us, often leads to unnecessary duplications (of tests ordered and patient histories taken, for example) and also contributes to errors.

To many healthcare professionals and other policy makers, the solution is for both hospitals and physician practices to use computers for medical records. And this has already started to take place. But a 2008 survey by the government found only 4% of physicians had an electronic record keeping system. And a 2009 survey found that even though hospitals have long used computers for at least some forms of record keeping, less than 2% had a comprehensive electronic record keeping system. Given the need to improve the quality of care and reduce costs, a push for comprehensive electronic health records is now on – with proposals for using federal dollars to help hospitals fully convert to electronic health records. What exactly, then, are EHRs? What are their pros and cons? And how likely is it that all (or most) of our hospitals and doctors will make the switch?

EHR vs. EMR: Defining Terms

Readers, aware that the term electronic medical records (EMR) are sometimes used instead of electronic health records, may wonder if they are the same things. Some say they are, others, like the National Alliance for Health Information Technology, say they are not. The difference, they say, lies in the scope of the records, which is based upon who is entering and managing the information. If, for instance, the record is kept and used by clinicians in a single entity – say a single hospital or medical practice – then it is an EMR. If records are 'interoperable', that is, if entries are made, managed, and accessed by multiple clinicians in multiple health settings, then it is an EHR. Because many different clinicians at different medical settings are entering information about a patient's many different health-related issues, the record becomes much more comprehensive.

EHRs: Pros ,Cons, Reality

Those in favor of a comprehensive, national electronic health records system expect that it will make healthcare in America safer; will improve the quality of care; and

See EHR*, Page 6*

EHR, *Continued from Page 5*

will help reduce healthcare costs. Central to all of this is that through the use of EHRs, doctors will be able to see what they currently cannot. That is, they will be able to see more complete health pictures of their patients – their medical and psychosocial histories including past tests taken, diagnoses made and treatments prescribed. In other words, it can improve communication between physicians who then won't be treating patients 'in the dark.' This can help reduce errors along with unnecessary duplications of history taking, tests and treatments. Such reductions, along with other computer-related, time saving measures, should help reduce the overall costs of healthcare and improve the quality of care.

EHRs can improve the quality of care in other ways, too. They can help identify practices that are associated with improved outcomes. Additionally, through MY CHART, a component of some EHR systems, patients are given access to their own health information – thus helping them manage their own care. And, as decades of studies have shown, patients who are able to understand and manage their care are more likely to have improved health outcomes. Where available, patients can sign up for free access to MY CHART which, in turn, allows them to view lab results and other recorded health information, schedule and cancel appointments, view billing statements, refill prescriptions, and more.

EHRs can improve the safety & quality of care, while cutting costs. But there can be downsides as well.

EHRs can also help improve quality of care and health outcomes through electronic linkages with local and state Health Departments (HDs). In what has been called a public health surveillance system, HDs monitor the records of participating health facilities on a daily basis. Without identifying each patient, they track signs, symptoms and diagnoses of all patients who came to the facility that day. This allows them to detect outbreaks such as measles or the flu, for instance, and to send outbreak alerts to doctors at participating facilities. Alerts ask doctors to help HDs with their trending efforts by collecting certain samples from patients with particular symptoms. They also provide links to more detailed information about the outbreak condition along with suggested steps to take when patients have signs of the condition. The biggest benefit of this system is that having been alerted, doctors are able to act in "real time" – that is, when they see their patients, not after. Not only can this prevent missed diagnoses, but making correct diagnoses earlier can both prevent unnecessary tests and improve the quality of care.

Unfortunately, there are also valid concerns about the downside of EHRs. As in the past, loss of privacy and confidentiality are concerns of the public and professional communities. And while EHRs can improve communication between all participants, it can limit it as well. In particular, while computers can be used to enhance doctor-patient communication during office visits, some patients and doctors find that use of computers in examining rooms are a barrier to communication and to making that human connection.

Other concerns include EHR software that limits data entry to items on a drop down menu – preventing doctors from including other information or comments that they think is pertinent. But, even when EHR software does allow doctors to enter what they want, two doctors report that their colleagues don't always do that. Rather than take time to review and analyze the situation, some 'cut and paste' large blocks of notes – either from other's notes or their own previous notes. While this may be efficient and meet billing requirements, the authors argue, this lack of independent, critical thinking serves no one. They further reported complaints that volumes of electronic notes and reports are of little value for teaching rounds, leading some doctors to use notes on index cards.[1]

Then, of course, there is the cost of setting up an institutional EHR. And while federal monies have been set aside to help in this regard, it has been noted that, for many hospitals, especially large ones, there will still be a huge financial burden to do so. Cost and the time it will take for healthcare staff to learn how to use such systems are among the many reasons why resistance to change is still strong. But another problem hinders the development of a nationwide system. In order for hospitals, medical and other healthcare practices throughout the US to have access to a particular patient's EHR, they will all need to speak the same 'language.' At this point, there are numerous EHR systems, which cannot interact with each other. Even Regional Health Information Organizations (RHIOs), which establish electronic exchanges of patient information between healthcare organizations within more limited geographical areas, are having problems with issues of cost and compatibility. While some are up and running, others are not yet and still others have bitten the dust. Given the steady march of technology in healthcare, however, the widespread use of comprehensive EHRs does seem inevitable – eventually. That could be a good thing – as long as we can also minimize their drawbacks.□

[1] Pamela Hartzband, MD and Jerome Groopman, MD, "Off the Record – Avoiding the Pitfalls of Going Electronic," *New England Journal of Medicine*, 358 (16): 1656-1658 (April 17, 2008).

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BOOK REVIEW

Technological Medicine: The Changing World of Doctors and Patients
By Stanley Joel Reiser
Cambridge University Press ISBN 978-0-521-83569-5

Reading this book brought back long-ago memories of trips to the local county fair and demonstrations of spinning wool into yarn. There, it seemed, onlookers were not only fascinated by *what* was happening, but also by *how* it was happening. Reiser's book will hold the same fascination for its readers because it lifts the veil from our eyes and enables us to see the wonder of the medical technologies that many of us have long taken for granted. Take the simple X-Ray, for instance, and how we give little thought to the fact that it allows doctors to see inside our bodies. As Reiser's book unfolds, however, we see how this and other remarkable accomplishments were first thought of (amazing in-and-of itself) and then painstakingly achieved.

He begins with the invention of the stethoscope, in 1816, and goes on to describe the development of various technologies – including the X-Ray, microscope, kidney dialysis machine, artificial respirator, and the obstetrical forceps – and how they changed the practice of medicine for doctors and patients. Also of great interest to readers will be the chapters on record keeping (see article on page 5) and on how medical technology and the theories driving medical practice reflect and inform one another. For instance, the ancient technology of bloodletting was a reflection of the humoral theory: health depends on the balance of blood, phlegm, black bile and yellow bile. Illness meant there was an imbalance, which could be restored through bloodletting. Reiser then shows how the modern technologies, enabling visualization of organs, cells and bacteria, led to the theory followed today: diseases are "„things [that] take up residence and leave traces in bodily structures (133)." In addition to the development and use of new technologies to treat diseases, he describes how this theory then led to the concept of disease prevention and public health initiatives.

Reiser ends his book with a chapter entitled: " Governing the Empire of Machines." In it he shows us how patients (the objects of care) got lost in the process of embracing modern technologies and disease theory and why good healthcare requires that they be found. Yes, readers should find it all very fascinating!□